#8

SEQUENCE LISTING

<110> Garcia, Pablo D
Hardy, Stephen F
Escobedo, Jaime
Williams, Lewis T

<120> ENDOGENOUS RETROVIRUSES UP-REGULATED IN PROSTATE CANCER

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<140> 10/016,604
<141> 2001-12-07

<150> 6,0251,830
<151> 2000-12-07

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gatgggattg gaggagctat gcataaggca atgctaatgg ctcaagcaat gagggggctc 720
actctaggag gacaagttag aacatttggg aaaaaatgtt ataattgtgg tcaaatcggt 780
catctgaaaa ggagttgccc aggcttaaac aagcaaaaaa aaaaaaaaaa aaaaaaaaaa 840
a 841

<210> 17
<211> 873
<212> DNA
<213> Homo sapiens

<400> 17
acaacaatgg catgcagaga ttactatccc agcctcccta tacagcccca ggaatcaaaa 60
aatcatgact aaaatgggat agctccctaa aaagggacta ggaaagaaag aagtcccaat 120
tgaggctgaa aaaaattaaa aaagaaaagg aatagggcat ccttttagg agcggtcact 180
gtagagcctc caaaacccat tccattaact tgggaaaaaa aaaactgtat ggtaaatcag 240
cagccgcttc caaaacaaaa gctggaggcc ttacacttat tagcaaagaa accattagaa 300
aaaggacatt gagccttcat tttcgccttg gaattctgtt tgtgattcag aaaaaatccg 360
gcagatggcg tatgctaact gagccattaa tgccgtaatt caacccatgg gggctctccc 420
accccggttg ccctctccag ccatggtccc ctttaattat aattgatctg aaggattgct 480
tttttaccat tcctctggca aaacaggatt ttgaaaaatt tgcttttacc acaccagcct 540
aaataataaa gaaccagcca ccaggtttca gtggaaagta ttgcctcagg gaatgcttaa 600
tagttcaact atttgtcagc tcaagctctg caaccagtta gagacaagtt ttcagactgt 660
tacatcgttc actatgttga tattttgtgt gctgcagaaa cgagagacaa attaattgac 720
cgttacacat ttctgcagac agaggttgcc aacgcggggc tgacaataac atctgataag 780
attcaaacct ctactccttt ccgttacttg ggaatgcagg tagaggaaag gaaaattaaa 840
ccccaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 873

<210> 18
<211> 733
<212> DNA
<213> Homo sapiens

<400> 18
ctgaaaaaaa tcaaaaaaga aaaggaatag ggcatccttt ttaggagcgg tcactgtaga 60
gcctccaaaa cccattccat taacttgggg gaaaaaaaaa caactgtatg gtaaatcagc 120
agcgcttcca aaacaaaaac tggaggcttt acatttatta gcaaagaaac aattagaaaa 180
aggacattga gccttcattt tcgccttgga attctgtttg taattcagaa aaaatccggc 240
agatggcgta taatgccgta attcaaccca tgggggctct cccaccccgg ttgccctctc 300
cagccatggt ccccttttaat tataattgat ctgaaggatt gctttttttac cattcctctg 360
gcaaaacagg attttgagaa atttgctttt accacaccag cctaaataat aaagaaccag 420
ccaccaggtt tcagtggaaa gtattgcctc agggaatgct taatagttca actatttgtc 480
agctcaagct ctgcaaccag ttagagacaa gttttcagac tgttacatcg ttcactatgt 540
tgatattttg tgtgctgcag aaacgagaga caaattaatt gaccgttaca catttctgca 600
gacagaggtt gccaacgcgg gactgacaat aacatctgat aagattcaaa cctctactcc 660
tttccgttac ttgggaatgc aggtagagga aaggaaaatt aaaccacaaa aaaaaaaaaa 720
aaaaaaaaaa aaa 733

<210> 19
<211> 785
<212> DNA
<213> Homo sapiens

<400> 19

cattagaaaa aggacattga gccttcattt tcgccttgga attctgtttg taattcagaa 60
aaaatccggc agatggcgta tgctaactga gccattaatg ccgtaattca acccatgggg 120
gctctcccac cccggttgcc ctctccagcc atggtcccct ttaattataa ttgatctgaa 180
ggattgcttt tttaccattc ctctggcaaa acaggatttt gaaaaatttg cttttaccac 240
accagcctaa ataataaaga accagccacc aggtttcagt ggaaagtatt gcctcaggga 300
atgcttaata gttcaactat ttgtcagctc aagctctgca accagttaga gacaagtttt 360
cagactgtta catcgttcac tatgttgata ttttgtgtgc tgcagaaacg agagacaaat 420
taattgaccg ttacacattt ctgcagacag aggttgccaa cgcgggactg acaataacat 480
ctgataagat tcaaacctct actcctttcc gttacttggg aatgcaggta gaggaaagga 540
aaattaaacc acaaaaaata gaaataagaa aagacacatt aaaagcatta aatgagtttc 600
aaaagttgct aggagatact aattggattt ggagatatta attggatttg gccaactcta 660
ggcattccta cttatgccat gtcaaatttg tactctttct taagagggga ctcggaatta 720
aatagtgaaa gaacgttaac tccagaggca actaaagaaa aaaaaaaaaa aaaaaaaaaa 780
aaaaa 785

<210> 20
<211> 1090
<212> DNA
<213> Homo sapiens

<400> 20
atctttaccc tgtataaaca tctttctctt cccagtattt ctaagcatgt gacaatgaat 60
atgcaaagga agcgcagcag tccaccaggt gtgggatatg tgtggcacaa ttcaagacaa 120
tgattaaacc tccacttgat gttgcaaaag agattttgaa aaatttgctt tcaccacacc 180
agcctaaata ataaagaacc agccaccagg tttcagtgga aagtattgcc tcagggaatg 240
cttaatagtt caactatttg tcagctcaag ctctgcaacc agttagagac aagttttcag 300
actgttacat cgttcactat gttgatattt tgtgtgctgc agaaacgaga gacaaattaa 360
ttgaccgtta cacatttctg cagacagagg ttgccaacgc gggactgaca ataacatctg 420
ataagattca agcctctact cctttccgtt acttgggaat gcaggtagag gaaaggaaaa 480
ttaaaccaca aaaaaataga aataagaaaa gacacattaa aagcattaaa tgagtttcaa 540
aagttgctag gagatactaa ttggatttgg agatattaat tggatttggc caactctagg 600
cattcctact tatgccatgt caaatttgtt ctctttctta agaggggact cggaattaaa 660
tagtgaaaga acgttaactc cagaggcaac taaagaaatt aaattaattg aagaaaaaat 720
tcggtcagca caagtaaata gaatagatca cttggcccca ctccaaattt tgatttttac 780
tactgcacat tccctaacag gcatcattgt tcaaaacaca gatcttgtgg agtggtcctt 840
ccttcctcac agtacaatta agacttttac attgtacttg gatcaaatgg ctacattaat 900
tggtcaggga agattatgaa taataacatt gtgtggaaat gacccagata aaatcactgt 960
tcctttcaac aagcaacagg ttagacaagc ctttatcaat tctggtgcat ggcagattgg 1020
tcttgccgat tttgtgggaa ttattgacaa tcgttaccac aaaaaaaaaa aaaaaaaaaa 1080
aaaaaaaaaa 1090

<210> 21
<211> 705
<212> DNA
<213> Homo sapiens

<400> 21
ccaaaagaat gagtcatcaa aactcagtat cacttgactc aaagagcaga gttggttgcc 60
gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaaagaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat ggaagcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaataaatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcacccagt gtcagattct acacctggcc actcaggagg caagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccttcatt 540
tggaaaattg tcatttgtcc atgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt caagagacat ttattatctt gttttcctgt 660
catgggagtt ccagaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 705

<210> 22
<211> 862
<212> DNA
<213> Homo sapiens

<400> 22
ccaaaagaat gagtcatcaa aactcagtat cactcgactc aaagagcaga gttggttgcc 60
gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaaagaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat ggaagcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaataaatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcgcccagt gtcagattct acacctggcc actcaggagg taagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccctcatt 540
tggaaaattg tcatttgtcc atgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt taagagacat ttattatctt gttttcctgt 660
catgggagtt ccagaaaaag ttaaaacaga caatgggcca ggttactgta gtaaagcagt 720
tcaaaaattc ttaaatcagt ggaaaattac acatacaata ggaattctct ataattccca 780
aggacaggcc ataattgaaa gaactaatag aacactcaaa gctcaattgg ttaaacaaaa 840
aaaaaaaaaa aaaaaaaaaa aa 862

<210> 23
<211> 865
<212> DNA
<213> Homo sapiens

<400> 23
ccaaaagaat gagtcatcaa aactcagtat cacttgactc aaagagcaga gttggttgcc 60
gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaaagaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat ggaggcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaatagatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcacccagt gtcagattct acacctggcc actcaggagg caagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccttcatt 540
tggaaaattg tcatttgtcc atgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt taagagacat ttattatctt gttttcctgt 660
catgggagtt ccagaaaaag ttaaaacaga caatgggcca ggttactgta gtaaagcagt 720
tcaaaaattc ttaaatcagt ggaaaattac acatacaata ggaattctct ataattccca 780
aggacaggcc ataattgaaa gaactaatag aacactcaaa gctcaattgg ttaaacaaaa 840
aaaaaaaaaa aaaaaaaaaa aaaaa 865

<210> 24
<211> 866
<212> DNA
<213> Homo sapiens

<400> 24
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gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaatgaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat ggaagcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaataaatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcacccagt gtcagattct acacctggcc actcaggagg caagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccttcatt 540
tggaaaattg tcatttgtcc atgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt taagagacat ttattatttt gttttcctgt 660

catgggagtt ccagaaaaag ttaaaacaga caatgggcca ggttactgta gtaaagcagt 720
tcaagaattc ttaaatcagt ggaaaattac acatacaata ggaattctct ataattccca 780
aggacaggcc ataattgaaa gaactaatag aacactcaaa gctcaattgg ttaaacaaaa 840
aaaaaaaaaa aaaaaaaaaa aaaaaa 866

<210> 25
<211> 882
<212> DNA
<213> Homo sapiens

<400> 25
ccaaaagaat gagtcatcaa aactcagtat cacttgactc aaagagcaga gttggttgcc 60
gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaaagaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat tgaagcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaataaatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcacccagt gtcagattct acacctggcc actcaggagg caagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccttcatt 540
tggaaaattg tcatttgtcc acgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt taagagacat ttattatctt gttttcctgt 660
catgggagtt ccagaaaaag ttaagacaga caatgggcca ggttactgta gtaaagcagt 720
tcaaaaattc ttaaatcagt ggaaaattac acatacaata ggaattctct ataattccca 780
aggacaggcc ataattgaaa gaactaatag aacactcaaa gctcaattgg ttaagcaaaa 840
aaaaaaaaaa aaaaaaaaaa aaacatgtcg gccgcctcgg cc 882

<210> 26
<211> 860
<212> DNA
<213> Homo sapiens

<400> 26
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gtcattacag tgttaacaag attttaatca gtctattaac attgtatcag attctgcata 120
tgtagtacag gctacaaagg atattgagag agccctaatc aaatacatta tggatgatca 180
gttaaacccg ctgtttaatt tgttacaaca aaatgtaaga aaaagaaatt tcccatttta 240
tattactcat attcgagcac acactaattt accagggcct ttaactaaag caaatgaaca 300
agctgacttg ctagtatcat ctgcattcat ggaagcacaa gaacttcatg ccttgactca 360
tgtaaatgca ataggattaa aaaataaatt tgatatcaca tggaaacaga caaaaaatat 420
tgtacaacat tgcacccagt gtcagattct acacctggcc actcaggagg caagagttaa 480
tcccagaggt ctatgtccta atgtgttatg gcaaatggat gtcatgcacg taccttcatt 540
tggaaaattg tcatttgtcc atgtgacagt tgatacttat tcacatttca tatgggcaac 600
ctgccagaca ggagaaagta cttcccatgt taagagacat ttattatctt gttttcctgt 660
catgggagtt ccagaaaaag ttaaaacaga caatgggcca ggttactgta gtaaagcagt 720
tcaaaaattc ttaaatcagt ggaaaattac acatacaata ggaattctct ataattccca 780
aggacaggcc ataattgaaa gaactaatag aacactcaaa gctcaattgg ttaaacaaaa 840
agaaaaaaaa aaaaaaaaaa 860

<210> 27
<211> 778
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(778)
<223> N=A,G,C,T

<400> 27

accggcctta cggccgggga agagntcaag taggagcgcc tgcccgagct gagactagat 60
gtgaaccttt caccatgaaa atgttaaaag atataaagga aggagttaaa caatatggat 120
ccaactcccc ttatataaga acagtattag attccattgc tcatggaaat agacttactc 180
cttatgactg ggaaattttg gccaaatctt ccctttcatc ctctcagtat ctacagttta 240
aaacctggtg gattgatgga gtacaggaac aggtacgaaa aaatcaggct actaagccca 300
ctgttaatat agacgcagac caattgttag gaacaggtcc aaattggagc accattaacc 360
aacaatcagt gatgcagaat gaggctattg aacaagtaag ggctatttgc ctcagggcct 420
ggggaaaaat tcaggaccca ggaacagctt tccctattaa ttcaattaga caaggctcta 480
aagagccata tcctgacttt gtggcaagat tacaagatgc tgctcaaaag tctattacag 540
atgacaatgc ccgaaaagtt attgtagaat taatggccta tgaaaatgca aatccagaat 600
gtcagtcggc cataaagcca ttaaaaggaa aagttccagc aggagttgat gtaattacag 660
aatatgtgaa ggcttgtgat gggattggag gagctatgcn taaggcaatg ctaatggctc 720
aagcaatgag ggggctcact ctaggaggac aagttagaac atttgggaaa aaatgttt 778

<210> 28
<211> 668
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(668)
<223> N=A,G,C,T

<400> 28
ttacggcctt acggccgggg aagnntntca agtaggagcg cctgcccgag ctgagactag 60
atgtgaacct ttcaccatga aaatgttaaa agatataaag gaaggagtta aacaatatgg 120
gtccaactcc ccttatataa gaacattatt agattccatt gctcatggaa atagacttac 180
tccttatgac tgggaaattt tggccaaatc ttccctttca tcctctcagt atctacagtt 240
taaaacctgg tggattgatg gagtacaaga acaggtacga aaaaatcagg ctactaagcc 300
cactgttaat atagacgcag accaattgtt aggaacaggt ccaaattgga gcaccattaa 360
ccaacaatca gtgatgcaga atgaggctat tgaacaagta agggctattt gcctcagggc 420
ctggggaaaa attcaggacc caggaacagc tttccctatt aattcaatta gacaaggctc 480
taaagagcca tatcctgact ttgtggcaag attacaagat gctgctcaaa agtctattac 540
agatgacaat gcccgaaaag ttattgtaga attaatggcc tatgaaaatg caaatccaga 600
atgtcagtcg gccataaagc cattaaaagg aaaagttcca gcaggagttg atgtaattac 660
agaatatn 668

<210> 29
<211> 659
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(659)
<223> N=A,G,C,T

<400> 29
cggccttacg gcccggggag anntcaagta ggagcgcctg cccgagctga gactagatgt 60
gaacctttca ccatgaaaat gttaaaagat ataaaggaag gagttaaaca atatggatcc 120
aactcccctt atataagaac agtattagat tccattgccc atggaaatag acttactcct 180
tatgactggg aaattttggc caaatcttcc ctttcatcct ctcagtatct acagtttaaa 240
acctggtgga ttgatggggt acaagaacag gtacgaaaaa aatcaggcta ctaagcccac 300
tgttaatata gacgcagacc aattgttagg aacaggtcca aattggagca ccattaacca 360
acaatcagtg atgcagaatg aggctattga acaagtaagg gctatttgcc tcagggcctg 420
gggaaaaatt caggacccag gaacagcttt ccctattaat tcaattagac aaggctctaa 480
agagccatat cctgactttg tggcaagatt acaagatgct gctcaaaagt ctattacaga 540
tgacaatgcc cgaaaagtta ttgtagaatt aatggcctat gaaaatgcaa atccagaatg 600
tcagtcggcc ataaagccat taaaaggaaa agttccagca ggagttgatg taattaccg 659

<210> 30
<211> 664
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(664)
<223> N=A,G,C,T

<400> 30
nccggcctta cggccgggnc aacaatggca tgcagagntt actatcccag cctccctata 60
cagccccagg aatcaaaaaa tcatgactaa aatgggatag ctccctaaaa agggactagg 120
aaagaaagaa gtcccaattg aggctgaaaa aaattaaaaa agaaaaggaa tagggcatcc 180
tttttaggag cggtcactgt agagcctcca aaacccattc cattaacttg ggaaaaaaaa 240
aactgtntgg taaatcagca gccgnttcca aaacaaaagc tggaggcctt acacttatta 300
ncaaagaanc cattanaaaa aggacattga gccttcattt tcgccttgga attctgtttg 360
tgattcaaaa aaaatccggc anatggcgta tgctaactga nccattaatg ccgtaattca 420
acccatgggg gctctcccac cccggttgcc ctntccagcc atggtcccct ttaattataa 480
ttgatctgaa ggattgcttt tttaccattc ctctggcaaa acaggatttt gaaaaatttg 540
cttttaccac accagcctaa ataataaana accanccacc aggtttcagt ggaaagtatt 600
gcctcaggga atgcttaata gttcaactat tngtcagctc aagctctgca accagttaga 660
gacn 664

<210> 31
<211> 743
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(743)
<223> N=A,G,C,T

<400> 31
ncctggcctt acggccgggg ctgaaaaaaa tcaaaaaaga aaaggaatag ggcatccttt 60
ttaggagcgg tcactgtaga gcctccaaaa cccattccat taacttgggg gaaaaaaaaa 120
caactgtatg gtaaatcagc agcgcttcca aaacaaaaac tggaggcttt acatttatta 180
gcaaagaaac aattagaaaa aggacattga gccttcattt tcgccttgga attctgtttg 240
taattcagaa aaaatccggc agatggcgta taatgccgta attcaaccca tgggggctct 300
cccaccccgg ttgccctctc cagccatggt ccccctttaat tataattgat ctgaaggatt 360
gctttttttac cattcctctg gcaaaacagg attttgagaa atttgctttt accacaccag 420
cctaaataat aaagaaccag ccaccaggtt tcagtggaaa gtattgcctc agggaatgct 480
taatagttca actatttgtc agctcaagct ctgcaaccag ttagagacaa gttttcagac 540
tgttacatcg ttcactatgt tgatattttg tgtgctgcag aaacgagaga caaattaatt 600
gaccgttaca catttctgca gacagaggtt gccaacgcgg gactgacaat aacatctgat 660
aagattcaaa cctctactcc tttccgttac ttgggaatgc aggtagagga aaggaaaatt 720
aaaccacaaa aaaaaaaaaa aan 743

<210> 32
<211> 679
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(679)
<223> N=A,G,C,T

<400> 32

nnnnncncgg gcattagaaa aaggacattg agccttcatt ttcgccttgg aattctgttt 60
gtaattcaga aaaaatccgg cagatggcgt atgctaactg agccattaat gccgtaattc 120
aacccatggg ggctctccca ccccggttgc cctctccagc catggtcccc tttaattata 180
attgatctga aggattgctt ttttaccatt cctctggcaa aacaggattt tgaaaaattt 240
gcttttacca caccagccta aataataaag aaccagccac caggtttcag tggaaagtat 300
tgcctcangg aatgcttaat agttcaacta tttgtcagct caaagctctg cacccagnta 360
gagacaagtt tcagactggt tcatcgtcct atgtgatatt ttgtgtgctg cagaacgaga 420
gacaaattat tggccgttca cattttgca gacagaggtt gccaacgcgg gactgacaat 480
aacatctgat aagattaaac ctctactcct tccgtacttg ggaatgcagg tggaggaaag 540
gaaaattaac ccccnnaaaa ttgaattang aaaagacccn ttaaagcctt aaatgagttc 600
aaaaagttgc taggagaaac taattggatt tggaganatt aattggattt ggcaactnta 660
ggcattccta cttatgccn 679

<210> 33
<211> 656
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(656)
<223> N=A,G,C,T

<400> 33
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aagcatgtga caatgaatat gcaaaggaag cgcagcagtc caccaggtgt gggatatgtg 120
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gcattaaatg agtttcaaaa gttgctagga gatactaatt ggatttggag atattaattg 600
gatttggcca actctaggca ttcctactta tgccatgtca aatttgttct ctttct 656

<210> 34
<211> 723
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(723)
<223> N=A,G,C,T

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tatcagattc tgcatatgta gtacaggcta caaaggatat tgagagagcc ctaatcaaat 180
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gaaatttccc attttatatt actcatattc gagcacacac taatttacca gggcctttaa 300
ctaaagcaaa tgaacaagct gacttgctag tatcatctgc attcatggaa gcacaagaac 360
ttcatgcctt gactcatgta aatgcaatag gattaaaaaa taaatttgat atcacatgga 420
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aggaggcaag agttaatccc agaggtctat gtcctaatgt gttatggcaa atggatgtca 540
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nnn 723

<210> 35
<211> 656
<212> DNA
<213> Homo sapiens

<400> 35
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<210> 36
<211> 773
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(773)
<223> N=A,G,C,T

<400> 36
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agagcagagt tggttgccgt cattacagtg ttaacaagat tttaatcagt ctattaacat 120
tgtatcagat tctgcatatg tagtacaggc tacaaaggat attgagagag ccctaatcaa 180
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tcaggaggca agagttaatc ccagaggtct atgtcctaat gtgttatggc aaatggatgt 540
catgcacgta ccttcatttg gaaaattgtc atttgtccat gtgacagttg atacttattc 600
acatttcata tgggcaacct gccagacagg agaaagtact tcccatgtta agagacattt 660
attatcttgt tttcctgtca tgggagttcc agaaaaagtt aaaacagaca atgggccang 720
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<210> 37
<211> 721
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(721)
<223> N=A,G,C,T

<400> 37
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nttncatggt tgcngtngtt acacctgtta acaagattnt aatcagtcta ttaacattgt 120
atcaaattct gcatatgtag nacaggctac aaaggatatt gagagagccc taatcaaata 180
cattatggat gatcagttaa acccgctgtt taatttgtta caacaaaatg taagaaaatg 240
aaatttccca ttttatatta ctcatattcg agcacacact aatttaccag ggcctttnac 300
taaagcaaat gaacaagctg acttgctngt atcatctgca ttcatggaag cacaagaact 360

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ggaggcaaga gttaatccca gaggtctatg tcctaatgtg ttatggcaaa tggatgtcat 540
gcacgtacct tcatttggaa aattgtcatt tgtccatgtg acagntgata cttattcaca 600
tttcatatgg gcaacctgcc agacangaga aagtncttcc catgttaaga gacatttatt 660
attttgntnt cctgncattg ggagttccan aaaaagtaaa acagacantg ggccaggtta 720
c 721

<210> 38
<211> 672
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(672)
<223> N=A,G,C,T

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gcagagttgg ttgccgtcnt tacagtgtta acaagatttt aatcagtcta ttaacattgt 120
atcagattct gcatatgtag tacaggctac aaaggatatt gagagagccc taatcaaata 180
cattatggat gatcagttaa acccgctgtt taatttgtta caacaaaatg taagaaaaag 240
aaatttccca ttttatatta ctcatattcg agcacacact aatttaccag ggcctttaac 300
taaagcaaat gaacaagctg acttgctagt atcatctgca ttcattgaag cacaagaact 360
tcatgccttg actcatgtaa atgcnatagg attaaaaaat aaatttgata tcacctggaa 420
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gcnccnncct tcctttngaa aannnnnntt tgtnccccnn acannngata cttattcacn 600
nttnntatng gnnacccccc ccacnngana aanaacctnc ccnntnnana naaantnntt 660
atttttnttt tn 672

<210> 39
<211> 757
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(757)
<223> N=A,G,C,T

<400> 39
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atcagattct gcatatgtag tacaggctac aaaggatatt gagagagccc taatcaaata 180
cattatggat gatcagttaa acccgctgtt taatttgtta caacaaaatg taagaaaaag 240
aaatttccca ttttatatta ctcatattcg agcacacact aatttaccag ggcctttaac 300
taaagcaaat gaacaagctg acttgctagt atcatctgca ttcatggaag cacaagaact 360
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ctggagtaaa gcagttcaaa aattcttaaa tcagtgg 757

<210> 40
<211> 777
<212> DNA

<213> Homo sapiens

<400> 40
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cttccctttc accctctcag tatctccagt ttaaaacctg gtggattgat ggggtacaag 180
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tgaacaacta taagggctat ttgcctcagg gcctgggaaa acattcagga cccaggaacc 360
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ggaggagcta tgcataaggc aatgccattg gctcaagcaa ttacaggggt tgctatagga 660
ggacaagtta aaacatttgg gggaaaatgt tataattgtg gtcaaatcgg tcatctaaaa 720
aagaattgcc cgagcttaaa ttacccccca aaaaaaaaaa aaaaaaaaaa aaaaaaa 777

<210> 41
<211> 670
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(670)
<223> N=A,G,C,T

<400> 41
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ccttatatta gaatattatt aaattccatt gctcatggaa atagacttat ttcttatgat 120
tgggaaattc tggctatatc ttccctttca ccctctcagt atctccagtt taaaacctgg 180
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acgcccgaaa agttattgta gaaataatgg cttatcaaaa cgcaaattca gagtgtcaat 540
cagccataaa gccattaaga ggaaatgttt cagcaggagt tgatgtaatt acagaatatg 600
tgaaggcttg tgatgggatt ggaggagcta tgcataaggc aatgccattg gctcaagcaa 660
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<210> 42
<211> 397
<212> DNA
<213> Homo sapiens

<400> 42
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acctcatgcc cttcttttag gttcaatcag acaaggt 397

<210> 43
<211> 413
<212> DNA
<213> Homo sapiens

<400> 43
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gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
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<210> 44
<211> 11122
<212> DNA
<213> Homo sapiens

<400> 44
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aatactgctt tgtaaagcat tgagatgttt atgtgtatgc atatccaaaa gcacagcact 8880
taatccttta cattgtctat gatgccaaga cctttgttca cgtgtttgtc tgctgaccct 8940
ctccccacaa ttgtcttgtg accctgacac atccccctct ttgagaaaca cccacagatg 9000
atcaataaat actaagggaa ctcagaggct ggcgggatcc tccatatgct gaacgctggt 9060
tccccgggtc cccttatttc tttctctata ctttgtctct gtgtcttttt cttttccaaa 9120
tctctcgtcc caccttacga gaaacaccca caggtgtgta ggggcaaccc acccctaca 9179

<210> 46
<211> 279
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(279)
<223> Xaa=Any amino acid

<400> 46
Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu Thr Arg Cys Glu Pro
1 5 10 15

Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu Gly Val Lys Gln Tyr
20 25 30
Gly Ser Asn Ser Pro Tyr Ile Arg Thr Val Leu Asp Ser Ile Ala His
35 40 45
Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser Ser
50 55 60
Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr Trp Trp Ile Asp Gly
65 70 75 80
Val Gln Glu Gln Val Arg Lys Lys Ser Gly Tyr Xaa Ala His Cys Xaa
85 90 95
Tyr Arg Arg Arg Pro Ile Val Arg Asn Arg Ser Lys Leu Glu His His
100 105 110
Xaa Pro Thr Ile Ser Asp Ala Glu Xaa Gly Tyr Xaa Thr Ser Lys Gly
115 120 125
Tyr Leu Pro Gln Gly Leu Gly Lys Asn Ser Gly Pro Arg Asn Ser Phe
130 135 140
Pro Tyr Xaa Phe Asn Xaa Thr Arg Leu Xaa Arg Ala Ile Ser Xaa Leu
145 150 155 160
Cys Gly Lys Ile Thr Arg Cys Cys Ser Lys Val Tyr Tyr Arg Xaa Gln
165 170 175
Cys Pro Lys Ser Tyr Cys Arg Ile Asn Gly Leu Xaa Lys Cys Lys Ser
180 185 190
Arg Met Ser Val Gly His Lys Ala Ile Lys Arg Lys Ser Ser Ser Arg
195 200 205
Ser Xaa Cys Asn Tyr Arg Ile Cys Glu Gly Leu Xaa Trp Asp Trp Arg
210 215 220
Ser Tyr Ala Xaa Gly Asn Ala Asn Gly Ser Ser Asn Glu Gly Ala His
225 230 235 240
Ser Arg Arg Thr Ser Xaa Asn Ile Trp Glu Lys Met Leu Xaa Leu Trp
245 250 255
Ser Asn Arg Ser Ser Glu Lys Glu Leu Pro Arg Leu Lys Gln Ala Lys
260 265 270
Lys Lys Lys Lys Lys Lys Lys
275

<210> 47
<211> 288
<212> PRT
<213> Homo sapiens

<400> 47
Glu Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu Thr Arg Cys Glu
1 5 10 15
Pro Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu Gly Val Lys Gln
20 25 30
Tyr Gly Ser Asn Ser Pro Tyr Ile Arg Thr Val Leu Asp Ser Ile Ala
35 40 45
His Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser
50 55 60
Ser Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr Trp Trp Ile Asp
65 70 75 80
Gly Val Gln Glu Gln Val Arg Lys Asn Gln Ala Thr Lys Pro Thr Val
85 90 95
Asn Ile Asp Ala Asp Gln Leu Leu Gly Thr Gly Pro Asn Trp Ser Thr
100 105 110
Ile Asn Gln Gln Ser Val Met Gln Asn Glu Ala Ile Glu Gln Val Arg
115 120 125
Ala Ile Cys Leu Arg Ala Trp Gly Lys Ile Gln Asp Pro Gly Thr Ala
130 135 140
Phe Pro Ile Asn Ser Ile Arg Gln Gly Ser Lys Glu Pro Tyr Pro Asp
145 150 155 160
Phe Val Ala Arg Leu Gln Asp Ala Ala Gln Lys Ser Ile Thr Asp Asp

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                165                 170                 175
Asn Ala Arg Lys Val Ile Val Glu Leu Met Ala Tyr Glu Asn Ala Asn
            180                 185                 190
Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys Gly Lys Val Pro Ala
        195                 200                 205
Gly Val Asp Val Ile Thr Glu Tyr Val Lys Ala Cys Asp Gly Ile Gly
    210                 215                 220
Gly Ala Met His Lys Ala Met Leu Met Ala Gln Ala Met Arg Gly Leu
225                 230                 235                 240
Thr Leu Gly Gly Gln Val Arg Thr Phe Gly Lys Lys Cys Tyr Asn Cys
                245                 250                 255
Gly Gln Ile Gly His Leu Lys Arg Ser Cys Pro Gly Leu Asn Lys Gln
            260                 265                 270
Asn Ile Ile Asn Gln Ala Ile Thr Glu Lys Lys Lys Lys Lys Lys Lys
        275                 280                 285


<210>  48
<211>  471
<212>  PRT
<213>  Homo sapiens

<220>
<221>  MISC_FEATURE
<222>  (1)..(471)
<223>  Xaa=Any amino acid

<400>  48
Glu Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu Thr Arg Cys Glu
1               5                   10                  15
Pro Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu Gly Val Lys Gln
            20                  25                  30
Tyr Gly Ser Asn Ser Pro Tyr Ile Arg Thr Leu Leu Asp Ser Ile Ala
        35                  40                  45
His Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser
    50                  55                  60
Ser Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr Trp Trp Ile Asp
65                  70                  75                  80
Gly Val Gln Glu Gln Val Arg Lys Asn Gln Ala Thr Lys Pro Thr Val
                85                  90                  95
Asn Ile Asp Ala Asp Gln Leu Leu Gly Thr Gly Pro Asn Trp Ser Thr
            100                 105                 110
Ile Asn Gln Gln Ser Val Met Gln Asn Glu Ala Ile Glu Gln Val Arg
        115                 120                 125
Ala Ile Cys Leu Arg Ala Trp Gly Lys Ile Gln Asp Pro Gly Thr Ala
    130                 135                 140
Phe Pro Ile Asn Ser Ile Arg Gln Gly Ser Lys Glu Pro Tyr Pro Asp
145                 150                 155                 160
Phe Val Ala Arg Leu Gln Asp Ala Ala Gln Lys Ser Ile Thr Asp Asp
                165                 170                 175
Asn Ala Arg Lys Val Ile Val Glu Leu Met Ala Tyr Glu Asn Ala Asn
            180                 185                 190
Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys Gly Lys Val Pro Ala
        195                 200                 205
Gly Val Asp Val Ile Thr Glu Tyr Val Lys Ala Cys Asp Gly Ile Gly
    210                 215                 220
Gly Ala Met His Lys Ala Met Leu Met Ala Gln Ala Met Arg Gly Leu
225                 230                 235                 240
Thr Leu Gly Gly Gln Val Arg Thr Phe Gly Lys Lys Cys Tyr Asn Cys
                245                 250                 255
Gly Gln Ile Gly His Arg Lys Arg Ser Cys Pro Gly Leu Asn Lys Gln
            260                 265                 270
Asn Ile Ile Asn Gln Ala Ile Thr Ala Lys Asn Lys Lys Pro Ser Gly
```

275 280 285
Leu Cys Pro Lys Cys Gly Lys Ala Lys His Trp Ala Asn Gln Cys His
290 295 300
Ser Lys Phe Asp Lys Asp Gly Gln Pro Leu Ser Gly Asn Arg Lys Arg
305 310 315 320
Gly Gln Pro Gln Ala Pro Gln Gln Thr Gly Ala Phe Pro Val Lys Leu
325 330 335
Phe Val Pro Gln Gly Phe Gln Gly Gln Gln Pro Leu Gln Lys Ile Pro
340 345 350
Pro Leu Gln Gly Val Ser Gln Leu Gln Gln Ser Asn Ser Cys Pro Ala
355 360 365
Pro Gln Gln Ala Ala Pro Gln Xaa Ile Tyr Val Pro Pro Lys Trp Ser
370 375 380
Phe Tyr Ser Leu Glu Ser Pro His Lys Arg Phe Leu Glu Gly Tyr Met
385 390 395 400
Ala Arg Cys Gln Lys Gly Gly Xaa Ala Phe Glu Gly Asp Gln Val Xaa
405 410 415
Ile Xaa Arg Glu Ser Lys Phe Ile Leu Gly Xaa Phe Thr Gln Ile Ile
420 425 430
Lys Gly Glu Phe Ser Xaa Xaa Ser Ala Pro Leu Phe Pro Gly Val Pro
435 440 445
Ile Gln Val Ile Glu Leu Leu Asn Tyr Cys Phe Cys Leu Met Gln Lys
450 455 460
Lys Lys Lys Lys Lys Lys Lys
465 470

<210> 49
<211> 258
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(258)
<223> Xaa=Any amino acid

<400> 49
Gly Ser Gln Ala Gly Val Lys Gln Tyr Gly Pro Asn Ser Pro Tyr Ile
1 5 10 15
Arg Ile Leu Leu Asn Ser Ile Ala His Gly Asn Arg Leu Ile Ser Tyr
20 25 30
Asp Trp Glu Ile Leu Ala Ile Ser Ser Leu Ser Pro Ser Gln Tyr Leu
35 40 45
Gln Phe Lys Thr Trp Trp Ile Asp Gly Val Gln Glu Gln Val Arg Lys
50 55 60
Asn Gln Ala Thr Asn Pro Val Ala Tyr Ile Asp Glu Asp Gln Leu Leu
65 70 75 80
Gly Arg Gly Pro Asn Trp Asp Thr Ile Asn Gln Gln Ser Val Met Lys
85 90 95
Met Arg Leu Leu Asn Asn Tyr Lys Gly Tyr Leu Pro Gln Gly Leu Gly
100 105 110
Lys His Ser Gly Pro Arg Asn Leu Met Pro Phe Phe Xaa Phe Asn Gln
115 120 125
Thr Arg Leu Xaa Arg Ala Ile Ser Arg Leu Cys Gly Lys Val Ala Arg
130 135 140
Cys Ser Ser Lys Ile His Cys Arg Xaa Arg Pro Lys Ser Tyr Cys Arg
145 150 155 160
Asn Asn Gly Leu Ser Lys Arg Lys Phe Arg Val Ser Ile Ser His Lys
165 170 175
Ala Ile Lys Arg Lys Cys Phe Ser Arg Ser Xaa Cys Asn Tyr Arg Ile
180 185 190
Cys Glu Gly Leu Xaa Trp Asp Trp Arg Ser Tyr Ala Xaa Gly Asn Ala

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        195                 200                 205
Ile Gly Ser Ser Asn Tyr Arg Gly Cys Tyr Arg Arg Thr Ser Xaa Asn
    210                 215                 220
Ile Trp Gly Lys Met Leu Xaa Leu Trp Ser Asn Arg Ser Ser Lys Lys
225                 230                 235                 240
Glu Leu Pro Glu Leu Lys Leu Pro Pro Lys Lys Lys Lys Lys Lys Lys
                245                 250                 255
Lys Lys
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<210> 50
<211> 288
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(288)
<223> Xaa=Any amino acid

<400> 50

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Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Xaa Leu Lys Glu Gln
1               5                   10                  15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
            20                  25                  30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
        35                  40                  45
Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
    50                  55                  60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Arg Asn Phe Pro Phe Tyr
65                  70                  75                  80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
                85                  90                  95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Met Glu Ala
            100                 105                 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
        115                 120                 125
Arg Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
    130                 135                 140
Thr Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Ala Arg Val Asn
145                 150                 155                 160
Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
                165                 170                 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
            180                 185                 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
        195                 200                 205
His Val Lys Arg His Leu Leu Ser Cys Phe Pro Val Met Gly Val Pro
    210                 215                 220
Glu Lys Val Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Val
225                 230                 235                 240
Gln Lys Phe Leu Asn Gln Trp Lys Ile Thr His Thr Ile Gly Ile Leu
                245                 250                 255
Tyr Asn Ser Gln Gly Gln Ala Ile Ile Glu Arg Thr Asn Arg Thr Leu
            260                 265                 270
Lys Ala Gln Leu Val Lys Gln Lys Lys Lys Lys Lys Lys Lys Lys Lys
        275                 280                 285
```

<210> 51
<211> 286
<212> PRT

<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(286)
<223> Xaa=Any amino acid

<400> 51
Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Xaa Leu Lys Glu Gln
1 5 10 15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
20 25 30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
35 40 45
Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
50 55 60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Arg Asn Phe Pro Phe Tyr
65 70 75 80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
85 90 95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Met Glu Ala
100 105 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
115 120 125
Lys Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
130 135 140
Thr Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Ala Arg Val Asn
145 150 155 160
Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
165 170 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
180 185 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
195 200 205
His Val Lys Arg His Leu Leu Ser Cys Phe Pro Val Met Gly Val Pro
210 215 220
Glu Lys Val Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Val
225 230 235 240
Gln Lys Phe Leu Asn Gln Trp Lys Ile Thr His Thr Ile Gly Ile Leu
245 250 255
Tyr Asn Ser Gln Gly Gln Ala Ile Ile Glu Arg Thr Asn Arg Thr Leu
260 265 270
Lys Ala Gln Leu Val Lys Gln Lys Glu Lys Lys Lys Lys Lys
275 280 285

<210> 52
<211> 287
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(287)
<223> Xaa=Any amino acid

<400> 52
Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Arg Leu Lys Glu Gln
1 5 10 15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
20 25 30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
35 40 45

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Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
    50                  55                  60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Arg Asn Phe Pro Phe Tyr
65                  70                  75                  80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
                85                  90                  95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Met Glu Ala
            100                 105                 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
        115                 120                 125
Lys Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
    130                 135                 140
Ala Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Val Arg Val Asn
145                 150                 155                 160
Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
                165                 170                 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
            180                 185                 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
        195                 200                 205
His Val Lys Arg His Leu Leu Ser Cys Phe Pro Val Met Gly Val Pro
    210                 215                 220
Glu Lys Val Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Val
225                 230                 235                 240
Gln Lys Phe Leu Asn Gln Trp Lys Ile Thr His Thr Ile Gly Ile Leu
                245                 250                 255
Tyr Asn Ser Gln Gly Gln Ala Ile Ile Glu Arg Thr Asn Arg Thr Leu
            260                 265                 270
Lys Ala Gln Leu Val Lys Gln Lys Lys Lys Lys Lys Lys Lys Lys
        275                 280                 285


<210>  53
<211>  288
<212>  PRT
<213>  Homo sapiens

<220>
<221>  MISC_FEATURE
<222>  (1)..(288)
<223>  Xaa=Any amino acid

<400>  53
Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Xaa Leu Lys Glu Gln
1               5                   10                  15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
            20                  25                  30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
        35                  40                  45
Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
    50                  55                  60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Xaa Asn Phe Pro Phe Tyr
65                  70                  75                  80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
                85                  90                  95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Met Glu Ala
            100                 105                 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
        115                 120                 125
Lys Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
    130                 135                 140
Thr Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Ala Arg Val Asn
145                 150                 155                 160
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Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
                165                 170                 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
            180                 185                 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
        195                 200                 205
His Val Lys Arg His Leu Leu Phe Cys Phe Pro Val Met Gly Val Pro
    210                 215                 220
Glu Lys Val Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Val
225                 230                 235                 240
Gln Glu Phe Leu Asn Gln Trp Lys Ile Thr His Thr Ile Gly Ile Leu
                245                 250                 255
Tyr Asn Ser Gln Gly Gln Ala Ile Ile Glu Arg Thr Asn Arg Thr Leu
            260                 265                 270
Lys Ala Gln Leu Val Lys Gln Lys Lys Lys Lys Lys Lys Lys Lys Lys
        275                 280                 285


<210>  54
<211>  234
<212>  PRT
<213>  Homo sapiens

<220>
<221>  MISC_FEATURE
<222>  (1)..(234)
<223>  Xaa=Any amino acid

<400>  54
Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Xaa Leu Lys Glu Gln
1               5                   10                  15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
            20                  25                  30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
        35                  40                  45
Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
    50                  55                  60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Arg Asn Phe Pro Phe Tyr
65                  70                  75                  80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
                85                  90                  95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Met Glu Ala
            100                 105                 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
        115                 120                 125
Lys Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
    130                 135                 140
Thr Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Ala Arg Val Asn
145                 150                 155                 160
Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
                165                 170                 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
            180                 185                 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
        195                 200                 205
His Val Lys Arg His Leu Leu Ser Cys Phe Pro Val Met Gly Val Pro
    210                 215                 220
Glu Lys Lys Lys Lys Lys Lys Lys Lys Lys
225                 230


<210>  55
<211>  293
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<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(293)
<223> Xaa=Any amino acid

<400> 55
Gln Lys Asn Glu Ser Ser Lys Leu Ser Ile Thr Xaa Leu Lys Glu Gln
1 5 10 15
Ser Trp Leu Pro Ser Leu Gln Cys Xaa Gln Asp Phe Asn Gln Ser Ile
20 25 30
Asn Ile Val Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Lys Asp Ile
35 40 45
Glu Arg Ala Leu Ile Lys Tyr Ile Met Asp Asp Gln Leu Asn Pro Leu
50 55 60
Phe Asn Leu Leu Gln Gln Asn Val Arg Lys Arg Asn Phe Pro Phe Tyr
65 70 75 80
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
85 90 95
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Phe Ile Glu Ala
100 105 110
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ile Gly Leu Lys Asn
115 120 125
Lys Phe Asp Ile Thr Trp Lys Gln Thr Lys Asn Ile Val Gln His Cys
130 135 140
Thr Gln Cys Gln Ile Leu His Leu Ala Thr Gln Glu Ala Arg Val Asn
145 150 155 160
Pro Arg Gly Leu Cys Pro Asn Val Leu Trp Gln Met Asp Val Met His
165 170 175
Val Pro Ser Phe Gly Lys Leu Ser Phe Val His Val Thr Val Asp Thr
180 185 190
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
195 200 205
His Val Lys Arg His Leu Leu Ser Cys Phe Pro Val Met Gly Val Pro
210 215 220
Glu Lys Val Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Val
225 230 235 240
Gln Lys Phe Leu Asn Gln Trp Lys Ile Thr His Thr Ile Gly Ile Leu
245 250 255
Tyr Asn Ser Gln Gly Gln Ala Ile Ile Glu Arg Thr Asn Arg Thr Leu
260 265 270
Lys Ala Gln Leu Val Lys Gln Lys Lys Lys Lys Lys Lys Lys Lys Thr
275 280 285
Cys Arg Pro Pro Arg
290

<210> 56
<211> 375
<212> PRT
<213> Homo sapiens

<400> 56
Glu Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu Thr Arg Cys Glu
1 5 10 15
Pro Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu Gly Val Lys Gln
20 25 30
Tyr Gly Ser Asn Ser Pro Tyr Ile Arg Thr Leu Leu Asp Ser Ile Ala
35 40 45
His Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser
50 55 60

```
Ser Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr Trp Trp Ile Asp
65                  70                  75                  80
Gly Val Gln Glu Gln Val Arg Lys Asn Gln Ala Thr Lys Pro Thr Val
                85                  90                  95
Asn Ile Asp Ala Asp Gln Leu Leu Gly Thr Gly Pro Asn Trp Ser Thr
            100                 105                 110
Ile Asn Gln Gln Ser Val Met Gln Asn Glu Ala Ile Glu Gln Val Arg
        115                 120                 125
Ala Ile Cys Leu Arg Ala Trp Gly Lys Ile Gln Asp Pro Gly Thr Ala
    130                 135                 140
Phe Pro Ile Asn Ser Ile Arg Gln Gly Ser Lys Glu Pro Tyr Pro Asp
145                 150                 155                 160
Phe Val Ala Arg Leu Gln Asp Ala Ala Gln Lys Ser Ile Thr Asp Asp
                165                 170                 175
Asn Ala Arg Lys Val Ile Val Glu Leu Met Ala Tyr Glu Asn Ala Asn
            180                 185                 190
Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys Gly Lys Val Pro Ala
        195                 200                 205
Gly Val Asp Val Ile Thr Glu Tyr Val Lys Ala Cys Asp Gly Ile Gly
    210                 215                 220
Gly Ala Met His Lys Ala Met Leu Met Ala Gln Ala Met Arg Gly Leu
225                 230                 235                 240
Thr Leu Gly Gly Gln Val Arg Thr Phe Gly Lys Lys Cys Tyr Asn Cys
                245                 250                 255
Gly Gln Ile Gly His Arg Lys Arg Ser Cys Pro Gly Leu Asn Lys Gln
            260                 265                 270
Asn Ile Ile Asn Gln Ala Ile Thr Ala Lys Asn Lys Lys Pro Ser Gly
        275                 280                 285
Leu Cys Pro Lys Cys Gly Lys Ala Lys His Trp Ala Asn Gln Cys His
    290                 295                 300
Ser Lys Phe Asp Lys Asp Gly Gln Pro Leu Ser Gly Asn Arg Lys Arg
305                 310                 315                 320
Gly Gln Pro Gln Ala Pro Gln Gln Thr Gly Ala Phe Pro Val Lys Leu
                325                 330                 335
Phe Val Pro Gln Gly Phe Gln Gly Gln Gln Pro Leu Gln Lys Ile Pro
            340                 345                 350
Pro Leu Gln Gly Val Ser Gln Leu Gln Gln Ser Asn Ser Cys Pro Ala
        355                 360                 365
Pro Gln Gln Ala Ala Pro Gln
    370                 375


<210>  57
<211>  288
<212>  PRT
<213>  Homo sapiens

<400>  57
Glu Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu Thr Arg Cys Glu
1               5                   10                  15
Pro Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu Gly Val Lys Gln
            20                  25                  30
Tyr Gly Ser Asn Ser Pro Tyr Ile Arg Thr Val Leu Asp Ser Ile Ala
        35                  40                  45
His Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser
    50                  55                  60
Ser Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr Trp Trp Ile Asp
65                  70                  75                  80
Gly Val Gln Glu Gln Val Arg Lys Asn Gln Ala Thr Lys Pro Thr Val
                85                  90                  95
Asn Ile Asp Ala Asp Gln Leu Leu Gly Thr Gly Pro Asn Trp Ser Thr
            100                 105                 110
Ile Asn Gln Gln Ser Val Met Gln Asn Glu Ala Ile Glu Gln Val Arg
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        115                 120                 125
Ala Ile Cys Leu Arg Ala Trp Gly Lys Ile Gln Asp Pro Gly Thr Ala
    130                 135                 140
Phe Pro Ile Asn Ser Ile Arg Gln Gly Ser Lys Glu Pro Tyr Pro Asp
145                 150                 155                 160
Phe Val Ala Arg Leu Gln Asp Ala Ala Gln Lys Ser Ile Thr Asp Asp
                165                 170                 175
Asn Ala Arg Lys Val Ile Val Glu Leu Met Ala Tyr Glu Asn Ala Asn
            180                 185                 190
Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys Gly Lys Val Pro Ala
        195                 200                 205
Gly Val Asp Val Ile Thr Glu Tyr Val Lys Ala Cys Asp Gly Ile Gly
    210                 215                 220
Gly Ala Met His Lys Ala Met Leu Met Ala Gln Ala Met Arg Gly Leu
225                 230                 235                 240
Thr Leu Gly Gly Gln Val Arg Thr Phe Gly Lys Lys Cys Tyr Asn Cys
                245                 250                 255
Gly Gln Ile Gly His Leu Lys Arg Ser Cys Pro Gly Leu Asn Lys Gln
            260                 265                 270
Asn Ile Ile Asn Gln Ala Ile Thr Glu Lys Lys Lys Lys Lys Lys Lys
        275                 280                 285


<210>  58
<211>  268
<212>  PRT
<213>  Homo sapiens

<400>  58
Gln Asp Phe Asn Gln Ser Ile Asn Ile Val Ser Asp Ser Ala Tyr Val
1               5                   10                  15
Val Gln Ala Thr Lys Asp Ile Glu Arg Ala Leu Ile Lys Tyr Ile Met
            20                  25                  30
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Trp Gln Met Asp Val Met His Val Pro Ser Phe Gly Lys Leu Ser Phe
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Val His Val Thr Val Asp Thr Tyr Ser His Phe Ile Trp Ala Thr Cys
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Gln Thr Gly Glu Ser Thr Ser His Val Lys Arg His Leu Leu Ser Cys
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Lys Pro Arg Gly Thr Ser Pro Leu Pro Ala Gly Gln Val Pro Val Thr
            180                 185                 190
Leu Gln Pro Gln Lys Gln Val Lys Glu Asn Lys Thr Gln Pro Pro Val
        195                 200                 205
Ala Tyr Gln Tyr Trp Pro Pro Ala Glu Leu Gln Tyr Arg Pro Pro Pro
    210                 215                 220
Glu Ser Gln Tyr Gly Tyr Pro Gly Met Pro Pro Ala Pro Gln Gly Arg
225                 230                 235                 240
Ala Pro Tyr Pro Gln Pro Pro Thr Arg Arg Leu Asn Pro Thr Ala Pro
                245                 250                 255
```

```
Pro Ser Arg Gln Gly Ser Lys Leu His Glu Ile Ile Asp Lys Ser Arg
            260                 265                 270
Lys Glu Gly Asp Thr Glu Ala Trp Gln Phe Pro Val Thr Leu Glu Pro
        275                 280                 285
Met Pro Pro Gly Glu Gly Ala Gln Glu Gly Glu Pro Pro Thr Val Glu
    290                 295                 300
Ala Arg Tyr Lys Ser Phe Ser Ile Lys Lys Leu Lys Asp Met Lys Glu
305                 310                 315                 320
Gly Val Lys Gln Tyr Gly Pro Asn Ser Pro Tyr Met Arg Thr Leu Leu
                325                 330                 335
Asp Ser Ile Ala His Gly His Arg Leu Ile Pro Tyr Asp Trp Glu Ile
            340                 345                 350
Leu Ala Lys Ser Ser Leu Ser Pro Ser Gln Phe Leu Gln Phe Lys Thr
        355                 360                 365
Trp Trp Ile Asp Gly Val Gln Glu Gln Val Arg Arg Asn Arg Ala Ala
    370                 375                 380
Asn Pro Pro Val Asn Ile Asp Ala Asp Gln Leu Leu Gly Ile Gly Gln
385                 390                 395                 400
Asn Trp Ser Thr Ile Ser Gln Gln Ala Leu Met Gln Asn Glu Ala Ile
                405                 410                 415
Glu Gln Val Arg Ala Ile Cys Leu Arg Ala Trp Glu Lys Ile Gln Asp
            420                 425                 430
Pro Gly Ser Thr Cys Pro Ser Phe Asn Thr Val Arg Gln Gly Ser Lys
        435                 440                 445
Glu Pro Tyr Pro Asp Phe Val Ala Arg Leu Gln Asp Val Ala Gln Lys
    450                 455                 460
Ser Ile Ala Asp Glu Lys Ala Arg Lys Val Ile Val Glu Leu Met Ala
465                 470                 475                 480
Tyr Glu Asn Ala Asn Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys
                485                 490                 495
Gly Lys Val Pro Ala Gly Ser Asp Val Ile Ser Glu Tyr Val Lys Ala
            500                 505                 510
Cys Asp Gly Ile Gly Gly Ala Met Tyr Lys Ala Met Leu Met Ala Gln
        515                 520                 525
Ala Ile Thr Gly Val Val Leu Gly Gly Gln Val Arg Thr Phe Gly Arg
    530                 535                 540
Lys Cys Tyr Asn Cys Gly Gln Ile Gly His Leu Lys Lys Asn Cys Pro
545                 550                 555                 560
Val Leu Asn Lys Gln Asn Ile Thr Ile Gln Ala Thr Thr Thr Gly Arg
                565                 570                 575
Glu Pro Pro Asp Leu Cys Pro Arg Cys Lys Lys Gly Lys His Trp Ala
            580                 585                 590
Ser Gln Cys Arg Ser Lys Phe Asp Lys Asn Gly Gln Pro Leu Ser Gly
        595                 600                 605
Asn Glu Gln Arg Gly Gln Pro Gln Ala Pro Gln Gln Thr Gly Ala Phe
    610                 615                 620
Pro Ile Gln Pro Phe Val Pro Gln Gly Phe Gln Gly Gln Gln Pro Pro
625                 630                 635                 640
Leu Ser Gln Val Phe Gln Gly Ile Ser Gln Leu Pro Gln Tyr Asn Asn
                645                 650                 655
Cys Pro Pro Pro Gln Ala Ala Val Gln Gln
            660                 665
```

<210> 93
<211> 2619
<212> DNA
<213> Homo sapiens

<400> 93

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atgttaactg acttaagggc tgtaaacgcc gtaattcaac ccatggggcc tctccaaccc     60
gggttgccct ctccggccat gatcccaaaa gattggcctt taattataat tgatctaaag    120
gattgctttt ttaccatccc tctggcagag caggattgcg aaaaatttgc ctttactata    180
```

```
ccagccataa ataataaaga accagccacc aggtttcagt ggaaagtgtt acctcaggga    240
atgcttaata gtccaactat ttgtcagact tttgtaggtc gagctcttca accagttaga    300
gaaaagtttt cagactgtta tattattcat tgtattgatg atattttatg tgctgcagaa    360
acgaaagata aattaattga ctgttataca tttctgcaag cagaggttgc caatgctgga    420
ctggcaatag catctgataa gatccaaacc tctactcctt ttcattattt agggatgcag    480
atagaaaata gaaaaattaa gccacaaaaa atagaaataa gaaaagacac attaaaaaca    540
ctaaatgatt ttcaaaaatt actaggagat attaattgga ttcggccaac tctaggcatt    600
cctacttatg ccatgtcaaa tttgttctct atcttaagag gagactcaga cttaaatagt    660
aaaagaatgt taaccccaga ggcaacaaaa gaaattaaat tagtggaaga aaaaattcag    720
tcagcgcaaa taaatagaat agatccctta gccccactcc aacttttgat ttttgccact    780
gcacattctc caacaggcat cattattcaa aatactgatc ttgtggagtg gtcattcctt    840
cctcacagta cagttaagac ttttacattg tacttggatc aaatagctac attaatcggt    900
cagacaagat tacgaataat aaaattatgt gggaatgacc cagacaaaat agttgtccct    960
ttaaccaagg aacaagttag acaagccttt atcaattctg gtgcatggaa gattggtctt   1020
gctaattttg tgggaattat tgataatcat tacccaaaaa caaagatctt ccagttctta   1080
aaattgacta cttggattct acctaaaatt accagacgtg aacctttaga aaatgctcta   1140
acagtattta ctgatggttc cagcaatgga aaagcagctt acacaggacc gaaagaacga   1200
gtaatcaaaa ctccatatca atcggctcaa agagcagagt tggttgcagt cattacagtg   1260
ttacaagatt ttgaccaacc tatcaatatt atatcagatt ctgcatatgt agtacaggct   1320
acaagggatg ttgagacagc tctaattaaa tatagcatgg atgatcagtt aaaccagcta   1380
ttcaatttat tacaacaaac tgtaagaaaa agaaatttcc cattttatat tacacatatt   1440
cgagcacaca ctaatttacc agggcctttg actaaagcaa atgaacaagc tgacttactg   1500
gtatcatctg cactcataaa agcacaagaa cttcatgctt tgactcatgt aaatgcagca   1560
ggattaaaaa acaaatttga tgtcacatgg aaacaggcaa aagatattgt acaacattgc   1620
acccagtgtc aagtcttaca cctgcccact caagaggcag gagttaatcc cagaggtctg   1680
tgtcctaatg cattatggca aatggatgtc acgcatgtac cttcatttgg aagattatca   1740
tatgttcacg taacagttga tacttattca catttcatat gggcaacttg ccaaacagga   1800
gaaagtactt cccatgttaa aaaacattta ttgtcttgtt ttgctgtaat gggagttcca   1860
gaaaaaatca aaactgacaa tggaccagga tattgtagta aagctttcca aaaattctta   1920
agtcagtgga aaatttcaca tacaacagga attccttata attcccaagg acaggccata   1980
gttgaaagaa ctaatagaac actcaaaact caattagtta aacaaaaaga agggggagac   2040
agtaaggagt gtaccactcc tcagatgcaa cttaatctag cactctatac tttaaatttt   2100
ttaaacattt atagaaatca gactactact tctgcagaac aacatcttac tggtaaaaag   2160
aacagcccac atgaaggaaa actaatttgg tggaaagata gtaaaaataa gacatgggaa   2220
atagggaagg tgataacgtg ggggagaggt tttgcttgtg tttcaccagg agaaaatcag   2280
cttcctgttt ggatacccac tagacatttg aagttctaca atgaacccat cagagatgca   2340
aagaaaagca cctccgcgga gacggagaca tcgcaatcga gcaccgttga ctcacaagat   2400
gaacaaaatg gtgacgtcag aagaacagat gaagttgcca tccaccaaga aggcagagcc   2460
gccaacttgg gcacaactaa agaagctgac gcagttagct acaaaatatc tagagaacac   2520
aaaggtgaca caaaccccag agagtatgct gcttgcagcc ttgatgattg tatcaatggt   2580
ggtaagtctc cctatgcctg caggagcagc tgcagctaa                          2619
```

<210> 94
<211> 872
<212> PRT
<213> Homo sapiens

<400> 94

```
Met Leu Thr Asp Leu Arg Ala Val Asn Ala Val Ile Gln Pro Met Gly
1               5                  10                  15
Pro Leu Gln Pro Gly Leu Pro Ser Pro Ala Met Ile Pro Lys Asp Trp
            20                  25                  30
Pro Leu Ile Ile Ile Asp Leu Lys Asp Cys Phe Phe Thr Ile Pro Leu
        35                  40                  45
Ala Glu Gln Asp Cys Glu Lys Phe Ala Phe Thr Ile Pro Ala Ile Asn
    50                  55                  60
Asn Lys Glu Pro Ala Thr Arg Phe Gln Trp Lys Val Leu Pro Gln Gly
65                  70                  75                  80
Met Leu Asn Ser Pro Thr Ile Cys Gln Thr Phe Val Gly Arg Ala Leu
                85                  90                  95
Gln Pro Val Arg Glu Lys Phe Ser Asp Cys Tyr Ile Ile His Cys Ile
            100                 105                 110
```

```
Asp Asp Ile Leu Cys Ala Ala Glu Thr Lys Asp Lys Leu Ile Asp Cys
        115                 120                 125
Tyr Thr Phe Leu Gln Ala Glu Val Ala Asn Ala Gly Leu Ala Ile Ala
    130                 135                 140
Ser Asp Lys Ile Gln Thr Ser Thr Pro Phe His Tyr Leu Gly Met Gln
145                 150                 155                 160
Ile Glu Asn Arg Lys Ile Lys Pro Gln Lys Ile Glu Ile Arg Lys Asp
                165                 170                 175
Thr Leu Lys Thr Leu Asn Asp Phe Gln Lys Leu Leu Gly Asp Ile Asn
            180                 185                 190
Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr Ala Met Ser Asn Leu
        195                 200                 205
Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn Ser Lys Arg Met Leu
    210                 215                 220
Thr Pro Glu Ala Thr Lys Glu Ile Lys Leu Val Glu Glu Lys Ile Gln
225                 230                 235                 240
Ser Ala Gln Ile Asn Arg Ile Asp Pro Leu Ala Pro Leu Gln Leu Leu
                245                 250                 255
Ile Phe Ala Thr Ala His Ser Pro Thr Gly Ile Ile Ile Gln Asn Thr
            260                 265                 270
Asp Leu Val Glu Trp Ser Phe Leu Pro His Ser Thr Val Lys Thr Phe
        275                 280                 285
Thr Leu Tyr Leu Asp Gln Ile Ala Thr Leu Ile Gly Gln Thr Arg Leu
    290                 295                 300
Arg Ile Ile Lys Leu Cys Gly Asn Asp Pro Asp Lys Ile Val Val Pro
305                 310                 315                 320
Leu Thr Lys Glu Gln Val Arg Gln Ala Phe Ile Asn Ser Gly Ala Trp
                325                 330                 335
Lys Ile Gly Leu Ala Asn Phe Val Gly Ile Ile Asp Asn His Tyr Pro
            340                 345                 350
Lys Thr Lys Ile Phe Gln Phe Leu Lys Leu Thr Thr Trp Ile Leu Pro
        355                 360                 365
Lys Ile Thr Arg Arg Glu Pro Leu Glu Asn Ala Leu Thr Val Phe Thr
    370                 375                 380
Asp Gly Ser Ser Asn Gly Lys Ala Ala Tyr Thr Gly Pro Lys Glu Arg
385                 390                 395                 400
Val Ile Lys Thr Pro Tyr Gln Ser Ala Gln Arg Ala Glu Leu Val Ala
                405                 410                 415
Val Ile Thr Val Leu Gln Asp Phe Asp Gln Pro Ile Asn Ile Ile Ser
            420                 425                 430
Asp Ser Ala Tyr Val Val Gln Ala Thr Arg Asp Val Glu Thr Ala Leu
        435                 440                 445
Ile Lys Tyr Ser Met Asp Asp Gln Leu Asn Gln Leu Phe Asn Leu Leu
    450                 455                 460
Gln Gln Thr Val Arg Lys Arg Asn Phe Pro Phe Tyr Ile Thr His Ile
465                 470                 475                 480
Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys Ala Asn Glu Gln
                485                 490                 495
Ala Asp Leu Leu Val Ser Ser Ala Leu Ile Lys Ala Gln Glu Leu His
            500                 505                 510
Ala Leu Thr His Val Asn Ala Ala Gly Leu Lys Asn Lys Phe Asp Val
        515                 520                 525
Thr Trp Lys Gln Ala Lys Asp Ile Val Gln His Cys Thr Gln Cys Gln
    530                 535                 540
Val Leu His Leu Pro Thr Gln Glu Ala Gly Val Asn Pro Arg Gly Leu
545                 550                 555                 560
Cys Pro Asn Ala Leu Trp Gln Met Asp Val Thr His Val Pro Ser Phe
                565                 570                 575
Gly Arg Leu Ser Tyr Val His Val Thr Val Asp Thr Tyr Ser His Phe
            580                 585                 590
Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser His Val Lys Lys
        595                 600                 605
His Leu Leu Ser Cys Phe Ala Val Met Gly Val Pro Glu Lys Ile Lys
```

```
    610                 615                 620
Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Phe Gln Lys Phe Leu
625                 630                 635                 640
Ser Gln Trp Lys Ile Ser His Thr Thr Gly Ile Pro Tyr Asn Ser Gln
                645                 650                 655
Gly Gln Ala Ile Val Glu Arg Thr Asn Arg Thr Leu Lys Thr Gln Leu
            660                 665                 670
Val Lys Gln Lys Glu Gly Gly Asp Ser Lys Glu Cys Thr Thr Pro Gln
        675                 680                 685
Met Gln Leu Asn Leu Ala Leu Tyr Thr Leu Asn Phe Leu Asn Ile Tyr
    690                 695                 700
Arg Asn Gln Thr Thr Thr Ser Ala Glu Gln His Leu Thr Gly Lys Lys
705                 710                 715                 720
Asn Ser Pro His Glu Gly Lys Leu Ile Trp Trp Lys Asp Ser Lys Asn
                725                 730                 735
Lys Thr Trp Glu Ile Gly Lys Val Ile Thr Trp Gly Arg Gly Phe Ala
            740                 745                 750
Cys Val Ser Pro Gly Glu Asn Gln Leu Pro Val Trp Ile Pro Thr Arg
        755                 760                 765
His Leu Lys Phe Tyr Asn Glu Pro Ile Arg Asp Ala Lys Lys Ser Thr
    770                 775                 780
Ser Ala Glu Thr Glu Thr Ser Gln Ser Ser Thr Val Asp Ser Gln Asp
785                 790                 795                 800
Glu Gln Asn Gly Asp Val Arg Arg Thr Asp Glu Val Ala Ile His Gln
                805                 810                 815
Glu Gly Arg Ala Ala Asn Leu Gly Thr Thr Lys Glu Ala Asp Ala Val
            820                 825                 830
Ser Tyr Lys Ile Ser Arg Glu His Lys Gly Asp Thr Asn Pro Arg Glu
        835                 840                 845
Tyr Ala Ala Cys Ser Leu Asp Asp Cys Ile Asn Gly Gly Lys Ser Pro
    850                 855                 860
Tyr Ala Cys Arg Ser Ser Cys Ser
865                 870
```

<210> 95
<211> 2085
<212> DNA
<213> Homo sapiens

<400> 95

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atgcaaagaa aagcacctcc gcggagacgg agacatcgca atcgagcacc gttgactcac     60
aagatgaaca aaatggtgac gtcagaagaa cagatgaagt tgccatccac caagaaggca    120
gagccgccaa cttgggcaca actaaagaag ctgacgcagt tagctacaaa atatctagag    180
aacacaaagg tgacacaaac cccagagagt atgctgcttg cagccttgat gattgtatca    240
atggtggtaa gtctccctat gcctgcagga gcagctgcag ctaactatac ctactgggcc    300
tatgtgcctt tcccgccctt aattcgggca gtcacatgga tggataatcc tacagaagta    360
tatgttaatg atagtgtatg ggtacctggc cccatagatg atcgctgccc tgccaaacct    420
gaggaagaag ggatgatgat aaatatttcc attgggtatc attatcctcc tatttgccta    480
gggagagcac caggatgttt aatgcctgca gtccaaaatt ggttggtaga agtacctact    540
gtcagtccca tctgtagatt cacttatcac atggtaagcg ggatgtcact caggccacgg    600
gtaaattatt tacaagactt ttcttatcaa agatcattaa aatttagacc taaagggaaa    660
ccttgcccca aggaaattcc caaagaatca aaaaatacag aagttttagt ttgggaagaa    720
tgtgtggcca atagtgcggt gatattacaa aacaatgaat tcggaactat tatagattgg    780
gcacctcgag gtcaattcta ccacaattgc tcaggacaaa ctcagtcgtg tcaaagtgca    840
caagtgagtc cagctgttga tagcgactta acagaaagtt tagacaaaca taagcataaa    900
aaattgcagt ctttctaccc ttgggaatgg ggagaaaaag gaatctctac cccaagacca    960
aaaatagtaa gtcctgtttc tggtcctgaa catccagaat tatggaggct tactgtggcc   1020
tcacaccaca ttagaatttg gtctggaaat caaactttag aaacaagaga tcgtaagcca   1080
ttttatacta ttgacctgaa ttccagtcta acagttcctt tacaaagttg cgtaaagccc   1140
ccttatatgc tagttgtagg aaatatagtt attaaaccag actcccagac tataacctgt   1200
gaaaattgta gattgcttac ttgcattgat tcaactttta attggcaaca ccgtattctg   1260
ctggtgagag caagagaggg cgtgtggatc cctgtgtcca tggaccgacc gtgggaggcc   1320
```

```
tcgccatccg tccatatttt gactgaagta ttaaaaggtg ttttaaatag atccaaaaga   1380
ttcattttta ctttaattgc agtgattatg ggattaattg cagtcacagc tacggctgct   1440
gtagcaggag ttgcattgca ctcttctgtt cagtcagtaa actttgttaa tgattggcaa   1500
aaaaattcta caagattgtg gaattcacaa tctagtattg atcaaaaatt ggcaaatcaa   1560
attaatgatc ttagacaaac tgtcatttgg atgggagaca gactcatgag cttagaacat   1620
cgtttccagt tacaatgtga ctggaatacg tcagattttt gtattacacc ccaaatttat   1680
aatgagtctg agcatcactg ggacatggtt agacgccatc tacagggaag agaagataat   1740
ctcactttag acatttccaa attaaaagaa caaattttcg aagcatcaaa agcccattta   1800
aatttggtgc caggaactga ggcaattgca ggagttgctg atggcctcgc aaatcttaac   1860
cctgtcactt gggttaagac cattggaagt actacgatta taaatctcat attaatcctt   1920
gtgtgcctgt tttgtctgtt gttagtctgc aggtgtaccc aacagctccg aagagacagc   1980
gaccatcgag aacgggccat gatgacgatg gcggttttgt cgaaaagaaa agggggaaat   2040
gtggggaaaa gcaagagaga tcagattgtt actgtgtctg tgtag                   2085
```

<210> 96
<211> 694
<212> PRT
<213> Homo sapiens

<400> 96

```
Met Gln Arg Lys Ala Pro Pro Arg Arg Arg Arg His Arg Asn Arg Ala
1               5                  10                  15
Pro Leu Thr His Lys Met Asn Lys Met Val Thr Ser Glu Glu Gln Met
            20                  25                  30
Lys Leu Pro Ser Thr Lys Lys Ala Glu Pro Pro Thr Trp Ala Gln Leu
        35                  40                  45
Lys Lys Leu Thr Gln Leu Ala Thr Lys Tyr Leu Glu Asn Thr Lys Val
    50                  55                  60
Thr Gln Thr Pro Glu Ser Met Leu Leu Ala Ala Leu Met Ile Val Ser
65                  70                  75                  80
Met Val Val Ser Leu Pro Met Pro Ala Gly Ala Ala Ala Ala Asn Tyr
                85                  90                  95
Thr Tyr Trp Ala Tyr Val Pro Phe Pro Pro Leu Ile Arg Ala Val Thr
            100                 105                 110
Trp Met Asp Asn Pro Thr Glu Val Tyr Val Asn Asp Ser Val Trp Val
        115                 120                 125
Pro Gly Pro Ile Asp Asp Arg Cys Pro Ala Lys Pro Glu Glu Glu Gly
    130                 135                 140
Met Met Ile Asn Ile Ser Ile Gly Tyr His Tyr Pro Pro Ile Cys Leu
145                 150                 155                 160
Gly Arg Ala Pro Gly Cys Leu Met Pro Ala Val Gln Asn Trp Leu Val
                165                 170                 175
Glu Val Pro Thr Val Ser Pro Ile Cys Arg Phe Thr Tyr His Met Val
            180                 185                 190
Ser Gly Met Ser Leu Arg Pro Arg Val Asn Tyr Leu Gln Asp Phe Ser
        195                 200                 205
Tyr Gln Arg Ser Leu Lys Phe Arg Pro Lys Gly Lys Pro Cys Pro Lys
    210                 215                 220
Glu Ile Pro Lys Glu Ser Lys Asn Thr Glu Val Leu Val Trp Glu Glu
225                 230                 235                 240
Cys Val Ala Asn Ser Ala Val Ile Leu Gln Asn Asn Glu Phe Gly Thr
                245                 250                 255
Ile Ile Asp Trp Ala Pro Arg Gly Gln Phe Tyr His Asn Cys Ser Gly
            260                 265                 270
Gln Thr Gln Ser Cys Gln Ser Ala Gln Val Ser Pro Ala Val Asp Ser
        275                 280                 285
Asp Leu Thr Glu Ser Leu Asp Lys His Lys His Lys Lys Leu Gln Ser
    290                 295                 300
Phe Tyr Pro Trp Glu Trp Gly Glu Lys Gly Ile Ser Thr Pro Arg Pro
305                 310                 315                 320
Lys Ile Val Ser Pro Val Ser Gly Pro Glu His Pro Glu Leu Trp Arg
                325                 330                 335
```

```
Leu Thr Val Ala Ser His His Ile Arg Ile Trp Ser Gly Asn Gln Thr
            340                 345                 350
Leu Glu Thr Arg Asp Arg Lys Pro Phe Tyr Thr Ile Asp Leu Asn Ser
        355                 360                 365
Ser Leu Thr Val Pro Leu Gln Ser Cys Val Lys Pro Pro Tyr Met Leu
    370                 375                 380
Val Val Gly Asn Ile Val Ile Lys Pro Asp Ser Gln Thr Ile Thr Cys
385                 390                 395                 400
Glu Asn Cys Arg Leu Leu Thr Cys Ile Asp Ser Thr Phe Asn Trp Gln
                405                 410                 415
His Arg Ile Leu Leu Val Arg Ala Arg Glu Gly Val Trp Ile Pro Val
            420                 425                 430
Ser Met Asp Arg Pro Trp Glu Ala Ser Pro Ser Val His Ile Leu Thr
        435                 440                 445
Glu Val Leu Lys Gly Val Leu Asn Arg Ser Lys Arg Phe Ile Phe Thr
    450                 455                 460
Leu Ile Ala Val Ile Met Gly Leu Ile Ala Val Thr Ala Thr Ala Ala
465                 470                 475                 480
Val Ala Gly Val Ala Leu His Ser Ser Val Gln Ser Val Asn Phe Val
                485                 490                 495
Asn Asp Trp Gln Lys Asn Ser Thr Arg Leu Trp Asn Ser Gln Ser Ser
            500                 505                 510
Ile Asp Gln Lys Leu Ala Asn Gln Ile Asn Asp Leu Arg Gln Thr Val
        515                 520                 525
Ile Trp Met Gly Asp Arg Leu Met Ser Leu Glu His Arg Phe Gln Leu
    530                 535                 540
Gln Cys Asp Trp Asn Thr Ser Asp Phe Cys Ile Thr Pro Gln Ile Tyr
545                 550                 555                 560
Asn Glu Ser Glu His His Trp Asp Met Val Arg Arg His Leu Gln Gly
                565                 570                 575
Arg Glu Asp Asn Leu Thr Leu Asp Ile Ser Lys Leu Lys Glu Gln Ile
            580                 585                 590
Phe Glu Ala Ser Lys Ala His Leu Asn Leu Val Pro Gly Thr Glu Ala
        595                 600                 605
Ile Ala Gly Val Ala Asp Gly Leu Ala Asn Leu Asn Pro Val Thr Trp
    610                 615                 620
Val Lys Thr Ile Gly Ser Thr Thr Ile Ile Asn Leu Ile Leu Ile Leu
625                 630                 635                 640
Val Cys Leu Phe Cys Leu Leu Leu Val Cys Arg Cys Thr Gln Gln Leu
                645                 650                 655
Arg Arg Asp Ser Asp His Arg Glu Arg Ala Met Met Thr Met Ala Val
            660                 665                 670
Leu Ser Lys Arg Lys Gly Gly Asn Val Gly Lys Ser Lys Arg Asp Gln
        675                 680                 685
Ile Val Thr Val Ser Val
    690
```

<210> 97
<211> 2004
<212> DNA
<213> Homo sapiens

<400> 97

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atggggcaaa ctaaaagtaa aactaaaagt aaatatgcct cttatctcag ctttattaaa     60
attcttttaa aaagaggggg agttagagta tctacaaaaa atctaatcaa gctatttcaa    120
ataatagaac aattttgccc atggtttcca gaacaaggaa ctttagatct aaaagattgg    180
aaaagaattg gcgaggaact aaaacaagca ggtagaaagg gtaatatcat tccacttaca    240
gtatggaatg attgggccat tattaaagca gctttagaac catttcaaac aaaagaagat    300
agcgtttcag tttctgatgc ccctggaagc tgtgtaatag attgtaatga aaagacaggg    360
agaaaatccc agaaagaaac agaaagttta cattgcgaat atgtaacaga gccagtaatg    420
gctcagtcaa cgcaaaatgt tgactataat caattacagg gggtgatata tcctgaaacg    480
ttaaaattag aaggaaaagg tccagaatta gtggggccat cagagtctaa accacgaggg    540
```

```
ccaagtcctc ttccagcagg tcaggtgccc gtaacattac aacctcaaac gcaggttaaa    600
gaaaataaga cccaaccgcc agtagcttat caatactggc cgccggctga acttcagtat    660
ctgccacccc cagaaagtca gtatggatat ccaggaatgc ccccagcact acagggcagg    720
gcgccatatc ctcagccgcc cactgtgaga cttaatccta cagcatcacg tagtggacaa    780
ggtggtacac tgcacgcagt cattgatgaa gccagaaaac agggagatct tgaggcatgg    840
cggttcctgg taatttaca actggtacag gccggggaag agactcaagt aggagcgcct    900
gcccgagctg agactagatg tgaacctttc accatgaaaa tgttaaaaga tataaaggaa    960
ggagttaaac aatatggatc caactcccct tatataagaa cattattaga ttccattgct   1020
catggaaata gacttactcc ttatgactgg gaaagtttgg ccaaatcttc cctttcatcc   1080
tctcagtatc tacagtttaa aacctggtgg attgatggag tacaagaaca ggtacgaaaa   1140
aatcaggcta ctaagcccac tgttaatata gacgcagacc aattgttagg aacaggtcca   1200
aattggagca ccattaacca acaatcagtg atgcagaatg aggctattga acaagtaagg   1260
gctatttgcc tcagggcctg gggaaaaatt caggacccag gaacagcttt ccctattaat   1320
tcaattagac aaggctctaa agagccatat cctgactttg tggcaagatt acaagatgct   1380
gctcaaaagt ctattacaga tgacaatgcc cgaaaagtta ttgtagaatt aatggcctat   1440
gaaaatgcaa atccagaatg tcagtcggcc ataaagccat taaaaggaaa agttccagca   1500
ggagttgatg taattacaga atatgtgaag gcttgtgatg ggattggagg agctatgcat   1560
aaggcaatgc taatggctca agcaatgagg gggctcactc taggaggaca agttagaaca   1620
tttgggaaaa aatgttataa ttgtggtcaa atcggtcatc tgaaaaggag ttgcccagtc   1680
ttaaataaac agaatataat aaatcaagct attacagcaa aaaataaaaa gccatctggc   1740
ctgtgtccaa aatgtggaaa aggaaaacat tgggccaatc aatgtcattc taaatttgat   1800
aaagatgggc aaccattgtc gggaaacagg aagaggggcc agcctcaggc cccccaacaa   1860
actggggcat tcccagttca actgtttgtt cctcagggtt ttcaaggaca acaaccccta   1920
cagaaaatac caccacttca gggagtcagc caattacaac aatccaacag ctgtcccgcg   1980
ccacagcagg cagcgccaca gtag                                          2004
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<210> 98
<211> 667
<212> PRT
<213> Homo sapiens

<400> 98

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Ser Phe Ile Lys Ile Leu Leu Lys Arg Gly Gly Val Arg Val Ser Thr
            20                  25                  30
Lys Asn Leu Ile Lys Leu Phe Gln Ile Ile Glu Gln Phe Cys Pro Trp
        35                  40                  45
Phe Pro Glu Gln Gly Thr Leu Asp Leu Lys Asp Trp Lys Arg Ile Gly
    50                  55                  60
Glu Glu Leu Lys Gln Ala Gly Arg Lys Gly Asn Ile Ile Pro Leu Thr
65                  70                  75                  80
Val Trp Asn Asp Trp Ala Ile Ile Lys Ala Ala Leu Glu Pro Phe Gln
                85                  90                  95
Thr Lys Glu Asp Ser Val Ser Val Ser Asp Ala Pro Gly Ser Cys Val
            100                 105                 110
Ile Asp Cys Asn Glu Lys Thr Gly Arg Lys Ser Gln Lys Glu Thr Glu
        115                 120                 125
Ser Leu His Cys Glu Tyr Val Thr Glu Pro Val Met Ala Gln Ser Thr
    130                 135                 140
Gln Asn Val Asp Tyr Asn Gln Leu Gln Gly Val Ile Tyr Pro Glu Thr
145                 150                 155                 160
Leu Lys Leu Glu Gly Lys Gly Pro Glu Leu Val Gly Pro Ser Glu Ser
                165                 170                 175
Lys Pro Arg Gly Pro Ser Pro Leu Pro Ala Gly Gln Val Pro Val Thr
            180                 185                 190
Leu Gln Pro Gln Thr Gln Val Lys Glu Asn Lys Thr Gln Pro Pro Val
        195                 200                 205
Ala Tyr Gln Tyr Trp Pro Pro Ala Glu Leu Gln Tyr Leu Pro Pro Pro
    210                 215                 220
Glu Ser Gln Tyr Gly Tyr Pro Gly Met Pro Pro Ala Leu Gln Gly Arg
225                 230                 235                 240
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Ala Pro Tyr Pro Gln Pro Pro Thr Val Arg Leu Asn Pro Thr Ala Ser
                245                 250                 255
Arg Ser Gly Gln Gly Gly Thr Leu His Ala Val Ile Asp Glu Ala Arg
            260                 265                 270
Lys Gln Gly Asp Leu Glu Ala Trp Arg Phe Leu Val Ile Leu Gln Leu
        275                 280                 285
Val Gln Ala Gly Glu Glu Thr Gln Val Gly Ala Pro Ala Arg Ala Glu
    290                 295                 300
Thr Arg Cys Glu Pro Phe Thr Met Lys Met Leu Lys Asp Ile Lys Glu
305                 310                 315                 320
Gly Val Lys Gln Tyr Gly Ser Asn Ser Pro Tyr Ile Arg Thr Leu Leu
                325                 330                 335
Asp Ser Ile Ala His Gly Asn Arg Leu Thr Pro Tyr Asp Trp Glu Ser
            340                 345                 350
Leu Ala Lys Ser Ser Leu Ser Ser Ser Gln Tyr Leu Gln Phe Lys Thr
        355                 360                 365
Trp Trp Ile Asp Gly Val Gln Glu Gln Val Arg Lys Asn Gln Ala Thr
    370                 375                 380
Lys Pro Thr Val Asn Ile Asp Ala Asp Gln Leu Leu Gly Thr Gly Pro
385                 390                 395                 400
Asn Trp Ser Thr Ile Asn Gln Gln Ser Val Met Gln Asn Glu Ala Ile
                405                 410                 415
Glu Gln Val Arg Ala Ile Cys Leu Arg Ala Trp Gly Lys Ile Gln Asp
            420                 425                 430
Pro Gly Thr Ala Phe Pro Ile Asn Ser Ile Arg Gln Gly Ser Lys Glu
        435                 440                 445
Pro Tyr Pro Asp Phe Val Ala Arg Leu Gln Asp Ala Ala Gln Lys Ser
    450                 455                 460
Ile Thr Asp Asp Asn Ala Arg Lys Val Ile Val Glu Leu Met Ala Tyr
465                 470                 475                 480
Glu Asn Ala Asn Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys Gly
                485                 490                 495
Lys Val Pro Ala Gly Val Asp Val Ile Thr Glu Tyr Val Lys Ala Cys
            500                 505                 510
Asp Gly Ile Gly Gly Ala Met His Lys Ala Met Leu Met Ala Gln Ala
        515                 520                 525
Met Arg Gly Leu Thr Leu Gly Gly Gln Val Arg Thr Phe Gly Lys Lys
    530                 535                 540
Cys Tyr Asn Cys Gly Gln Ile Gly His Leu Lys Arg Ser Cys Pro Val
545                 550                 555                 560
Leu Asn Lys Gln Asn Ile Ile Asn Gln Ala Ile Thr Ala Lys Asn Lys
                565                 570                 575
Lys Pro Ser Gly Leu Cys Pro Lys Cys Gly Lys Gly Lys His Trp Ala
            580                 585                 590
Asn Gln Cys His Ser Lys Phe Asp Lys Asp Gly Gln Pro Leu Ser Gly
        595                 600                 605
Asn Arg Lys Arg Gly Gln Pro Gln Ala Pro Gln Gln Thr Gly Ala Phe
    610                 615                 620
Pro Val Gln Leu Phe Val Pro Gln Gly Phe Gln Gly Gln Gln Pro Leu
625                 630                 635                 640
Gln Lys Ile Pro Pro Leu Gln Gly Val Ser Gln Leu Gln Gln Ser Asn
                645                 650                 655
Ser Cys Pro Ala Pro Gln Gln Ala Ala Pro Gln
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<210> 99
<211> 1004
<212> DNA
<213> Homo sapiens

<400> 99
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gggcattccc agttcaactg tttgttcctc agggttttca aggacaacaa cccctacaga 120
aaataccacc acttcaggga gtcagccaat tacaacaatc caacagctgt cccgcgccac 180
agcaggcagc gccacagtag atttatgttc cacccaaatg gtctctttac tccctggaga 240
gcccccacaa aagattccta gaggggtata tggcccgctg ccagaaggga gggtaggcct 300
tattttaggg agatcaagtc taaatttgaa gggagtccaa attcatactg gggtaattta 360
ttcagattat aaaggggaa ttcagttagt gatcagctcc actgttccct ggagtgccaa 420
tccaggtgat agaattgctc aattactgct tttgccttat gttaaaattg gggaaaacaa 480
aacggaaaga acaggagggt ttggaagtac caaccctgca ggaaaagcca cttattgggc 540
taatcaggtc tcagaggata gacccgtgtg tacagtcact attcagggaa agagtttgaa 600
ggattagtgg atacccaggc tgatgtttct atcatcggca taggcaccgc ctcagaagtg 660
tatcaaagtg ccatgatttt acattgtcta ggatctgata atcaagaaag tacggttcag 720
cctatgatca cttctattcc aatcaattta tggggccgag acttgttaca acaatggcat 780
gcagagatta ctatcccagc ctccctatac agccccagga atcaaaaaat catgactaaa 840
atgggatagc tccctaaaaa gggactagga aagaatgaag atggcattaa agtcccaact 900
gaggctgaaa aaaatcaaaa aaagaaaagg aatagggcat ccttttaga agcggtcact 960
gtagagcctc caaaacccat tccattaatt tgggggggaaa aaaa 1004

<210> 100
<211> 2671
<212> DNA
<213> Homo sapiens

<400> 100
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aaaaaaactg tatggtaaat cagtagccgc ttccaaaaca aaaactggag gctttacact 180
tattagcaaa gaaacagtta gaaaaaggac atattgagcc ttcattttcg ccttggaatt 240
ctcctgtttg taattcagaa aaaatccggc agatggcgta tgctaactga cttaagagcc 300
attaatgcca taattcaacc catgggggct ctcccatccc ggttgccctc tccagccatg 360
gtccccttta attataattg atctgaagga ttgctttttt accattcctc tggcaaaaga 420
ggattttgaa aaatttgctt ttactatacc agcctaaata ataaagaacc agccaccagg 480
tttcagtgga aagtattgcc tcagggaatg cttaataatt caactatttg tcagactttc 540
atagctcaag ctctgcaacc agttagagac aagttttcag actgttatat cgttcattat 600
gttgatattt tgtgtgctgc agaaacgaga gacaaattaa ttgaccgtta cacatttctc 660
agacagaggt tgccaacgcg ggactgacaa tagcatctga taagattcaa acctctcctc 720
ctttccatta cttgggaatg caggtagagg aaaggaaaat taaaccacaa aaaatagaaa 780
taagaaaaga cacattaaaa acattaaatg agtttcaaaa gttggtagga gatactaatt 840
ggattcggag atattaattg gatttggcca actctaggca ttcctactta tgccatgtca 900
attttgttct ctttcttaag aggggacttg gaattaaata gtgaaagaat gttacctcca 960
gaggcaacta aagaaattaa attaattgaa gaaaaaaatt cggtcagcac aagtaaatag 1020
gatcacttgg ccccactcca aattttgatt tttggtactg cacattctct aacagccatc 1080
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tttacattgt acttggatca aatggctaca ttaattggtc agggaagatt acgaataata 1200
acattgtgtg gaaatgaccc agataaaatc actgttcctt tcaacaagca acaagttaga 1260
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gataatcatt acccaaaaac aaaaatcttc cagttcttaa aattgactac ttggattcta 1380
cctaaaatta ccagacgtga acctttagaa aatgctctaa cagtatttac tgatggttcc 1440
agcaatggaa aagcggctta cacagggccg aaagaacgag taatcaaaac tccgtatcaa 1500
tcagctcaaa gagcagagtt ggttgcagtc attacagtgt tacaagattt tgaccaacct 1560
atcaatatta tatcagattc tgcatatgta gtacaggcta caagggatgt tgagacagct 1620
ctaattaaat atagcacgga cgatcattta aaccagctat tcaatttatt acaacaaact 1680
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gcacaagaac ttcttgcttt gactcatgta aatgcagcag gattaaaaaa caaatttgat 1860
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acaacaggaa ttccttataa ttcccaagga caggccatag ttgaaagaac taatagaaca 2280
ctcaaaactc aattagttaa acaaaaagaa gggggagaca gtaaggagtg taccactcct 2340

cagatgcaac ttaatctagc actctatact ttaaattttt taaacattta tagaaatcag 2400
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ctaatttggt ggaaagataa taaaaataag acatgggaaa tagggaaggt gataacgtgg 2520
gggagaggtt ttgcttgtgt ttcaccagga gaaaatcagc ttcctgtttg gatacccact 2580
agacatttga agttctacaa tgaacccatc ggagatgcaa agaaaagggc ctccacagag 2640
atggtaaccc cagtcacatg gatggataat c 2671

<210> 101
<211> 1665
<212> DNA
<213> Homo sapiens

<400> 101
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cccacagatg atcgctgccc tgccaaacct gaggaagaag ggatgatgat aaatatttcc 120
attgtgtatc gttatcctcc tatttgccta gggagagcac caggatgttt aatgcctgca 180
gtccaaaatt ggttggtaga agtacctact gtcagtccta acagtagatt cacttatcac 240
atggtaagcg ggatgtcact caggccacgg gtaaattatt tacaagactt ttcttatcaa 300
agatcattaa aatttagacc taaagggaaa ccttgcccca aggaaattcc caaagaatca 360
aaaaatacag aagttttagt ttgggaagaa tgtgtggcca atagtgcggt gatattacaa 420
aacaatgaat tcggaactat tatagattgg gcacctcgag gtcaattcta ccacaattgc 480
tcaggacaaa ctcagtcgtg tccaagtgca caagtgagtc cagctgttga tagcgactta 540
acagaaagtc tagacaaaca taagcataaa aaattacagt ctttctaccc ttgggaatgg 600
ggagaaaaag gaatctctac cccaagacca gaaataataa gtcctgtttc tggtcctgaa 660
catccagaat tatggaggct ttggcctgac accacattag aatttggtct ggaaatcaaa 720
ctttagaaac aagagatcgt aagccatttt atactatcga cctaaattcc agtctaacgg 780
ttcctttaca aagttgcgta aagccctctt atatgctagt tgtaggaaat atagttatta 840
aaccagactc ccaaactata acctgtgaaa attgtagatt gtttacttgc attgattcaa 900
cttttaattg gcggcaccgt attctgctgg tgagagcaag agagggcgtg tggatctctg 960
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aagacatttt aaatagatcc aaaagattca tttttacctt aattgcagtg attatgggat 1080
taattgcagt cacagctacg gctgctgtgg caggagttgc attgcactct tctgttcagt 1140
cggtaaactt tgttaatgat tggcaaaaga attctacaag attgtggaat tcacaatcta 1200
gtattgatca aaaattggca aatcaaatta atgatcttag acaaactgtc atttggatgg 1260
gagacagact catgagctta gaacattgtt tccagttaca gtgtgactgg aatacgtcag 1320
atttttgtat tacaccccaa atttataatg agtctgagca tcactgggac atggttagac 1380
gccatctaca gggaagagaa gataatctca ctttagacat ttccaaatta aaataacaaa 1440
ttttcgaagc atcaaaagcc catttaaatt tgatgccagg aactgaggca attgcaggag 1500
ttgctgatgg cctcgcaaat cttaaccctg tcacttgggt taagaccatc ggaagtacta 1560
tgattataaa tctcatatta atccttgtgt gcctgttttg tctgttgtta gtctgcaggt 1620
gtacccaaca gctccgaaga gacagcgacc atcgagaacg ggcca 1665

<210> 102
<211> 852
<212> DNA
<213> Homo sapiens

<400> 102
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ataatagaac aattttgccc atggtttcca gaacaaggaa cttcagatct aaaagattgg 180
aaaagaattg gtaaggaact aaaacaagca ggtaggaagg gtaatatcat tccacttaca 240
gtatggaatg attgggccat tattaaagca gctttagaac catttcaaac agaagaagat 300
agcatttcag tttctgatgc ccctggaagc tgtttaatag attgtaatga aaacacaagg 360
aaaaaatccc agaaagaaac cgaaagttta cattgcgaat atgtagcaga gccggtaatg 420
gctcagtcaa cgcaaaatgt tgactataat caattacagg aggtgatata tcctgaaacg 480
ttaaaattag aaggaaaagg tccagaatta atggggccat cagagtctaa accacgaggc 540
acaagtcctc ttccagcagg tcaggtgctc gtaagattac aacctcaaaa gcaggttaaa 600
gaaaataaga cccaaccgca agtagcctat caatactgcc gctggctgaa cttcagtatc 660
ggccacccccc agaaagtcag tatggatatc caggaatgcc cccagcacca cagggcaggg 720
cgccatacca tcagccgccc actaggagac ttaatcctat ggcaccacct agtagacagg 780

gtagtgaatt acatgaaatt attgataaat caagaaagga aggagatact gaggcatggc 840
aattcccagt aa 852

<210> 103
<211> 283
<212> PRT
<213> Homo sapiens

<400> 103
Met Gly Gln Thr Lys Ser Lys Ile Lys Ser Lys Tyr Ala Ser Tyr Leu
1 5 10 15
Ser Phe Ile Lys Ile Leu Leu Lys Arg Gly Gly Val Lys Val Ser Thr
20 25 30
Lys Asn Leu Ile Lys Leu Phe Gln Ile Ile Glu Gln Phe Cys Pro Trp
35 40 45
Phe Pro Glu Gln Gly Thr Ser Asp Leu Lys Asp Trp Lys Arg Ile Gly
50 55 60
Lys Glu Leu Lys Gln Ala Gly Arg Lys Gly Asn Ile Ile Pro Leu Thr
65 70 75 80
Val Trp Asn Asp Trp Ala Ile Ile Lys Ala Ala Leu Glu Pro Phe Gln
85 90 95
Thr Glu Glu Asp Ser Ile Ser Val Ser Asp Ala Pro Gly Ser Cys Leu
100 105 110
Ile Asp Cys Asn Glu Asn Thr Arg Lys Lys Ser Gln Lys Glu Thr Glu
115 120 125
Ser Leu His Cys Glu Tyr Val Ala Glu Pro Val Met Ala Gln Ser Thr
130 135 140
Gln Asn Val Asp Tyr Asn Gln Leu Gln Glu Val Ile Tyr Pro Glu Thr
145 150 155 160
Leu Lys Leu Glu Gly Lys Gly Pro Glu Leu Met Gly Pro Ser Glu Ser
165 170 175
Lys Pro Arg Gly Thr Ser Pro Leu Pro Ala Gly Gln Val Leu Val Arg
180 185 190
Leu Gln Pro Gln Lys Gln Val Lys Glu Asn Lys Thr Gln Pro Gln Val
195 200 205
Ala Tyr Gln Tyr Cys Arg Trp Leu Asn Phe Ser Ile Gly His Pro Gln
210 215 220
Lys Val Ser Met Asp Ile Gln Glu Cys Pro Gln His His Arg Ala Gly
225 230 235 240
Arg His Thr Ile Ser Arg Pro Leu Gly Asp Leu Ile Leu Trp His His
245 250 255
Leu Val Asp Arg Val Val Asn Tyr Met Lys Leu Leu Ile Asn Gln Glu
260 265 270
Arg Lys Glu Ile Leu Arg His Gly Asn Ser Gln
275 280

<210> 104
<211> 434
<212> PRT
<213> Homo sapiens

<400> 104
Met Pro Pro Ala Pro Gln Gly Arg Ala Pro Tyr His Gln Pro Pro Thr
1 5 10 15
Arg Arg Leu Asn Pro Met Ala Pro Pro Ser Arg Gln Gly Ser Glu Leu
20 25 30
His Glu Ile Ile Asp Lys Ser Arg Lys Glu Gly Asp Thr Glu Ala Trp
35 40 45
Gln Phe Pro Val Thr Leu Glu Pro Met Pro Pro Gly Glu Gly Ala Gln
50 55 60
Glu Gly Glu Pro Pro Thr Val Glu Ala Arg Tyr Lys Ser Phe Ser Ile

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65                  70                  75                  80
Lys Met Leu Lys Asp Met Lys Glu Gly Val Lys Gln Tyr Gly Pro Asn
                85                  90                  95
Ser Pro Tyr Met Arg Thr Leu Leu Asp Ser Ile Ala Tyr Gly His Arg
            100                 105                 110
Leu Ile Pro Tyr Asp Trp Glu Ile Leu Ala Lys Ser Ser Leu Ser Pro
        115                 120                 125
Ser Gln Phe Leu Gln Phe Lys Thr Trp Trp Ile Asp Gly Val Gln Glu
    130                 135                 140
Gln Val Arg Arg Asn Arg Ala Ala Asn Pro Pro Val Asn Ile Asp Ala
145                 150                 155                 160
Asp Gln Leu Leu Gly Ile Gly Gln Asn Trp Ser Thr Ile Ser Gln Gln
                165                 170                 175
Ala Leu Met Gln Asn Glu Ala Ile Glu Gln Val Arg Ala Ile Cys Leu
            180                 185                 190
Arg Ala Trp Glu Lys Ile Gln Asp Pro Gly Ser Thr Cys Pro Ser Phe
        195                 200                 205
Asn Thr Val Arg Gln Gly Ser Lys Glu Pro Tyr Pro Asp Phe Val Ala
    210                 215                 220
Arg Leu Gln Asp Val Ala Gln Lys Ser Ile Ala Asp Glu Lys Ala Gly
225                 230                 235                 240
Lys Val Ile Val Glu Leu Met Ala Tyr Glu Asn Ala Asn Pro Glu Cys
                245                 250                 255
Gln Ser Ala Ile Lys Pro Leu Lys Gly Lys Val Pro Ala Gly Ser Asp
            260                 265                 270
Val Ile Ser Glu Tyr Val Lys Ala Cys Asp Gly Ile Gly Gly Ala Met
        275                 280                 285
His Lys Ala Met Leu Met Ala Gln Ala Ile Thr Gly Val Val Leu Gly
    290                 295                 300
Gly Gln Val Arg Thr Phe Gly Gly Lys Cys Tyr Asn Cys Gly Gln Ile
305                 310                 315                 320
Gly His Leu Lys Lys Asn Cys Pro Val Leu Asn Lys Gln Asn Ile Thr
                325                 330                 335
Ile Gln Ala Thr Thr Thr Gly Arg Glu Pro Pro Asp Leu Cys Pro Arg
            340                 345                 350
Cys Lys Lys Gly Lys His Trp Ala Ser Gln Cys Arg Ser Lys Phe Asp
        355                 360                 365
Lys Asn Gly Gln Pro Leu Ser Gly Asn Glu Gln Arg Gly Gln Pro Gln
    370                 375                 380
Ala Pro Gln Gln Thr Gly Ala Phe Pro Ile Gln Pro Phe Val Pro Gln
385                 390                 395                 400
Gly Phe Gln Gly Gln Gln Pro Pro Leu Ser Gln Val Phe Gln Gly Ile
                405                 410                 415
Ser Gln Leu Pro Gln Tyr Asn Asn Cys Pro Ser Pro Gln Ala Ala Val
            420                 425                 430
Gln Gln
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<210> 105
<211> 279
<212> DNA
<213> Homo sapiens

<400> 105
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accatgcccg ctccattata tagccccacg agtcaaaaaa tcatgaccaa gatgggatat 180
ataccaggaa agggactagg gaaaaatgaa gatggcatta aagttccagt tgaggctaaa 240
ataaatcaag aaagagaagg aatagggtat ccttttttag 279

<210> 106

<211> 92
<212> PRT
<213> Homo sapiens

<400> 106
Met Glu Ile Leu His Cys Leu Gly Pro Asp Asn Gln Glu Ser Thr Val
1 5 10 15
Gln Pro Met Ile Thr Ser Ile Pro Leu Asn Leu Trp Gly Arg Asp Leu
20 25 30
Leu Gln Gln Trp Gly Ala Glu Ile Thr Met Pro Ala Pro Leu Tyr Ser
35 40 45
Pro Thr Ser Gln Lys Ile Met Thr Lys Met Gly Tyr Ile Pro Gly Lys
50 55 60
Gly Leu Gly Lys Asn Glu Asp Gly Ile Lys Val Pro Val Glu Ala Lys
65 70 75 80
Ile Asn Gln Glu Arg Glu Gly Ile Gly Tyr Pro Phe
85 90

<210> 107
<211> 4086
<212> DNA
<213> Homo sapiens

<400> 107
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attataattg atctaaagga ttgctttttt accatccctc tggcagagca ggattgtgaa 120
aaatttgcct ttactatacc agccataaat aataaagaac cagccaccag gtttcagtgg 180
aaagtgttac ctcagggaat gcttaatagt ccaactattt gtcagacttt tgtaggtcga 240
gctcttcaac cagtgagaga aaagttttca gactgttata ttattcatta tattgatgat 300
attttatgtg ctgcagaaac gaaagataaa ttaattgact gttatacatt tctgcaagca 360
gaggttgcca atgctggact ggcaatagca tccgataaga tccaaacctc tactcctttt 420
cattatttag ggatgcagat agaaaataga aaaattaagc cacaaaaaat agaaataaga 480
aaagacacat taaaaacact aaatgatttt caaaaattac taggagatat taattggatt 540
cggccaactc taggcattcc tacttatgcc atgtcaaatt tgttctctat cttaagagga 600
gactcagact taaatagtca aagaatatta accccagagg caacaaaaga aattaaatta 660
gtggaagaaa aaattcagtc agcgcaaata aatagaatag atcccttagc cccactccaa 720
cttttgattt ttgccactgc acattctcca acaggcatca ttattcaaaa tactgatctt 780
gtggagtggt cattccttcc tcacagtaca gttaagactt ttacattgta cttggatcaa 840
atagctacat taatcggtca gacaagatta cgaataacaa aattatgtgg aaatgaccca 900
gacaaaatag ttgtcccttt aaccaaggaa caagttagac aagcctttat caattctggt 960
gcatggcaga ttggtcttgc taattttgtg ggacttattg ataatcatta cccaaaaaca 1020
aagatcttcc agttcttaaa attgactact tggattctac ctaaaattac cagacgtgaa 1080
cctttagaaa atgctctaac agtatttact gatggttcca gcaatggaaa agcagcttac 1140
acagggccga aagaacgagt aatcaaaact ccatatcaat cggctcaaag agacgagttg 1200
gttgcagtca ttacagtgtt acaagatttt gaccaaccta tcaatattat atcagattct 1260
gcatatgtag tacaggctac aagggatgtt gagacagctc taattaaata tagcatggat 1320
gatcagttaa accagctatt caatttatta caacaaactg taagaaaaag aaatttccca 1380
ttttatatta cttatattcg agcacacact aatttaccag ggcctttgac taaagcaaat 1440
gaacaagctg acttactggt atcatctgca ctcataaaag cacaagaact tcatgctttg 1500
actcatgtaa atgcagcagg attaaaaaac aaatttgatg tcacatggaa acaggcaaaa 1560
gatattgtac aacattgcac ccagtgtcaa gtcttacacc tgcccactca agaggcagga 1620
gttaatccca gaggtctgtg tcctaatgca ttatggcaaa tggatgtcac gcatgtacct 1680
tcatttggaa gattatcata tgttcatgta acagttgata cttattcaca tttcatatgg 1740
gcaacttgcc aaacaggaga aagtacttcc catgttaaaa aacatttatt gtcttgtttt 1800
gctgtaatgg gagttccaga aaaaatcaaa actgacaatg gaccaggata ttgtagtaaa 1860
gctttccaaa aattcttaag tcagtggaaa atttcacata caacaggaat tccttataat 1920
tcccaaggac aggccatagt tgaaagaact aatagaacac tcaaaactca attagttaaa 1980
caaaaagaag ggggagacag taaggagtgt accactcctc agatgcaact taatctagca 2040
ctctatactt taaatttttt aaacatttat agaaatcaga ctactacttc tgcagaacaa 2100
catcttactg gtaaaaagaa cagcccacat gaaggaaaac taatttggtg gaaagataat 2160
aaaaataaga catgggaaat agggaaggtg ataacgtggg ggagaggttt tgcttgtgtt 2220
tcaccaggag aaaatcagct tcctgtttgg ttacccacta gacatttgaa gttctacaat 2280

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gaacccatcg gagatgcaaa gaaaagggcc tccacggaga tggtaacacc agtcacatgg   2340
atggataatc ctatagaagt atatgttaat gatagtatat gggtacctgg ccccatagat   2400
gatcgctgcc ctgccaaacc tgaggaagaa gggatgatga taaatatttc cattgggtat   2460
cgttatcctc ctatttgcct agggagagca ccaggatgtt taatgcctgc agtccaaaat   2520
tggttggtag aagtacctac tgtcagtccc atcagtagat tcacttatca catggtaagc   2580
gggatgtcac tcaggccacg ggtaaattat ttacaagact tttcttatca aagatcatta   2640
aaatttagac ctaaagggaa accttgcccc aaggaaattc ccaaagaatc aaaaaataca   2700
gaagttttag tttgggaaga atgtgtggcc aatagtgcgg tgatattata aaacaatgaa   2760
tttggaacta ttatagattg ggcacctcga ggtcaattct accacaattg ctcaggacaa   2820
actcagtcgt gtccaagtgc acaagtgagt ccagctgttg atagcgactt aacagaaagt   2880
ttagacaaac ataagcataa aaaattgcag tctttctacc cttgggaatg gggagaaaaa   2940
ggaatctcta ccccaagacc aaaaatagta agtcctgttt ctggtcctga acatccagaa   3000
ttatggaggc ttactgtggc ctcacaccac attagaattt ggtctggaaa tcaaacttta   3060
gaaacaagag attgtaagcc attttatact gtcgacctaa attccagtct aacagttcct   3120
ttacaaagtt gcgtaaagcc cccttatatg ctagttgtag gaaatatagt tattaaacca   3180
gactcccaga ctataacctg tgaaaattgt agattgctta cttgcattga ttcaactttt   3240
aattggcaac accgtattct gctggtgaga gcaagagagg gcgtgtggat ccctgtgtcc   3300
atggaccgac cgtgggaggc ctcaccatcc gtccatattt tgactgaagt attaaaaggt   3360
gttttaaata gatccaaaag attcattttt actttaattg cagtgattat gggattaatt   3420
gcagtcacag ctacggctgc tgtagcagga gttgcattgc actcttctgt tcagtcagta   3480
aactttgtta atgattggca aaagaattct acaagattgt ggaattcaca atctagtatt   3540
gatcaaaaat tggcaaatca aattaatgat cttagacaaa ctgtcatttg gatgggagac   3600
agactcatga gcttagaaca tcgtttccag ttacaatgtg actggaatac gtcagatttt   3660
tgtattacac cccaaattta taatgagtct gagcatcact gggacatggt tagacgccat   3720
ctacagggaa gagaagataa tctcacttta gacatttcca aattaaaaga acaaattttc   3780
gaagcatcaa aagcccattt aaatttggtg ccaggaactg aggcaattgc aggagttgct   3840
gatggcctcg caaatcttaa ccctgtcact tgggttaaga ccattggaag tacatcgatt   3900
ataaatctca tattaatcct tgtgtgcctg ttttgtctgt tgttagtctg caggtgtacc   3960
caacagctcc gaagagacag cgaccatcga gaacgggcca tgatgacgat ggcggttttg   4020
tcgaaaagaa aaggggaaa tgtggggaaa agcaagagag atcaaattgt tactgtgtct   4080
gtgtag                                                             4086
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<210> 108
<211> 1361
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1361)
<223> Xaa=Any amino acid

<400> 108

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            20                  25                  30
Pro Leu Ala Glu Gln Asp Cys Glu Lys Phe Ala Phe Thr Ile Pro Ala
        35                  40                  45
Ile Asn Asn Lys Glu Pro Ala Thr Arg Phe Gln Trp Lys Val Leu Pro
    50                  55                  60
Gln Gly Met Leu Asn Ser Pro Thr Ile Cys Gln Thr Phe Val Gly Arg
65                  70                  75                  80
Ala Leu Gln Pro Val Arg Glu Lys Phe Ser Asp Cys Tyr Ile Ile His
                85                  90                  95
Tyr Ile Asp Asp Ile Leu Cys Ala Ala Glu Thr Lys Asp Lys Leu Ile
            100                 105                 110
Asp Cys Tyr Thr Phe Leu Gln Ala Glu Val Ala Asn Ala Gly Leu Ala
        115                 120                 125
Ile Ala Ser Asp Lys Ile Gln Thr Ser Thr Pro Phe His Tyr Leu Gly
    130                 135                 140
Met Gln Ile Glu Asn Arg Lys Ile Lys Pro Gln Lys Ile Glu Ile Arg
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145 150 155 160
Lys Asp Thr Leu Lys Thr Leu Asn Asp Phe Gln Lys Leu Leu Gly Asp
165 170 175
Ile Asn Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr Ala Met Ser
180 185 190
Asn Leu Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn Ser Gln Arg
195 200 205
Ile Leu Thr Pro Glu Ala Thr Lys Glu Ile Lys Leu Val Glu Glu Lys
210 215 220
Ile Gln Ser Ala Gln Ile Asn Arg Ile Asp Pro Leu Ala Pro Leu Gln
225 230 235 240
Leu Leu Ile Phe Ala Thr Ala His Ser Pro Thr Gly Ile Ile Ile Gln
245 250 255
Asn Thr Asp Leu Val Glu Trp Ser Phe Leu Pro His Ser Thr Val Lys
260 265 270
Thr Phe Thr Leu Tyr Leu Asp Gln Ile Ala Thr Leu Ile Gly Gln Thr
275 280 285
Arg Leu Arg Ile Thr Lys Leu Cys Gly Asn Asp Pro Asp Lys Ile Val
290 295 300
Val Pro Leu Thr Lys Glu Gln Val Arg Gln Ala Phe Ile Asn Ser Gly
305 310 315 320
Ala Trp Gln Ile Gly Leu Ala Asn Phe Val Gly Leu Ile Asp Asn His
325 330 335
Tyr Pro Lys Thr Lys Ile Phe Gln Phe Leu Lys Leu Thr Thr Trp Ile
340 345 350
Leu Pro Lys Ile Thr Arg Arg Glu Pro Leu Glu Asn Ala Leu Thr Val
355 360 365
Phe Thr Asp Gly Ser Ser Asn Gly Lys Ala Ala Tyr Thr Gly Pro Lys
370 375 380
Glu Arg Val Ile Lys Thr Pro Tyr Gln Ser Ala Gln Arg Asp Glu Leu
385 390 395 400
Val Ala Val Ile Thr Val Leu Gln Asp Phe Asp Gln Pro Ile Asn Ile
405 410 415
Ile Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Arg Asp Val Glu Thr
420 425 430
Ala Leu Ile Lys Tyr Ser Met Asp Asp Gln Leu Asn Gln Leu Phe Asn
435 440 445
Leu Leu Gln Gln Thr Val Arg Lys Arg Asn Phe Pro Phe Tyr Ile Thr
450 455 460
Tyr Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys Ala Asn
465 470 475 480
Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Leu Ile Lys Ala Gln Glu
485 490 495
Leu His Ala Leu Thr His Val Asn Ala Ala Gly Leu Lys Asn Lys Phe
500 505 510
Asp Val Thr Trp Lys Gln Ala Lys Asp Ile Val Gln His Cys Thr Gln
515 520 525
Cys Gln Val Leu His Leu Pro Thr Gln Glu Ala Gly Val Asn Pro Arg
530 535 540
Gly Leu Cys Pro Asn Ala Leu Trp Gln Met Asp Val Thr His Val Pro
545 550 555 560
Ser Phe Gly Arg Leu Ser Tyr Val His Val Thr Val Asp Thr Tyr Ser
565 570 575
His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser His Val
580 585 590
Lys Lys His Leu Leu Ser Cys Phe Ala Val Met Gly Val Pro Glu Lys
595 600 605
Ile Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Phe Gln Lys
610 615 620
Phe Leu Ser Gln Trp Lys Ile Ser His Thr Thr Gly Ile Pro Tyr Asn
625 630 635 640
Ser Gln Gly Gln Ala Ile Val Glu Arg Thr Asn Arg Thr Leu Lys Thr
645 650 655

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Gln Leu Val Lys Gln Lys Glu Gly Gly Asp Ser Lys Glu Cys Thr Thr
            660                 665                 670
Pro Gln Met Gln Leu Asn Leu Ala Leu Tyr Thr Leu Asn Phe Leu Asn
        675                 680                 685
Ile Tyr Arg Asn Gln Thr Thr Thr Ser Ala Glu Gln His Leu Thr Gly
    690                 695                 700
Lys Lys Asn Ser Pro His Glu Gly Lys Leu Ile Trp Trp Lys Asp Asn
705                 710                 715                 720
Lys Asn Lys Thr Trp Glu Ile Gly Lys Val Ile Thr Trp Gly Arg Gly
                725                 730                 735
Phe Ala Cys Val Ser Pro Gly Glu Asn Gln Leu Pro Val Trp Leu Pro
            740                 745                 750
Thr Arg His Leu Lys Phe Tyr Asn Glu Pro Ile Gly Asp Ala Lys Lys
        755                 760                 765
Arg Ala Ser Thr Glu Met Val Thr Pro Val Thr Trp Met Asp Asn Pro
    770                 775                 780
Ile Glu Val Tyr Val Asn Asp Ser Ile Trp Val Pro Gly Pro Ile Asp
785                 790                 795                 800
Asp Arg Cys Pro Ala Lys Pro Glu Glu Glu Gly Met Met Ile Asn Ile
                805                 810                 815
Ser Ile Gly Tyr Arg Tyr Pro Pro Ile Cys Leu Gly Arg Ala Pro Gly
            820                 825                 830
Cys Leu Met Pro Ala Val Gln Asn Trp Leu Val Glu Val Pro Thr Val
        835                 840                 845
Ser Pro Ile Ser Arg Phe Thr Tyr His Met Val Ser Gly Met Ser Leu
    850                 855                 860
Arg Pro Arg Val Asn Tyr Leu Gln Asp Phe Ser Tyr Gln Arg Ser Leu
865                 870                 875                 880
Lys Phe Arg Pro Lys Gly Lys Pro Cys Pro Lys Glu Ile Pro Lys Glu
                885                 890                 895
Ser Lys Asn Thr Glu Val Leu Val Trp Glu Glu Cys Val Ala Asn Ser
            900                 905                 910
Ala Val Ile Leu Xaa Asn Asn Glu Phe Gly Thr Ile Ile Asp Trp Ala
        915                 920                 925
Pro Arg Gly Gln Phe Tyr His Asn Cys Ser Gly Gln Thr Gln Ser Cys
    930                 935                 940
Pro Ser Ala Gln Val Ser Pro Ala Val Asp Ser Asp Leu Thr Glu Ser
945                 950                 955                 960
Leu Asp Lys His Lys His Lys Lys Leu Gln Ser Phe Tyr Pro Trp Glu
                965                 970                 975
Trp Gly Glu Lys Gly Ile Ser Thr Pro Arg Pro Lys Ile Val Ser Pro
            980                 985                 990
Val Ser Gly Pro Glu His Pro Glu  Leu Trp Arg Leu Thr  Val Ala Ser
        995                 1000                1005
His His  Ile Arg Ile Trp Ser  Gly Asn Gln Thr Leu  Glu Thr Arg
    1010                1015                1020
Asp Cys  Lys Pro Phe Tyr Thr  Val Asp Leu Asn Ser  Ser Leu Thr
    1025                1030                1035
Val Pro  Leu Gln Ser Cys Val  Lys Pro Pro Tyr Met  Leu Val Val
    1040                1045                1050
Gly Asn  Ile Val Ile Lys Pro  Asp Ser Gln Thr Ile  Thr Cys Glu
    1055                1060                1065
Asn Cys  Arg Leu Leu Thr Cys  Ile Asp Ser Thr Phe  Asn Trp Gln
    1070                1075                1080
His Arg  Ile Leu Leu Val Arg  Ala Arg Glu Gly Val  Trp Ile Pro
    1085                1090                1095
Val Ser  Met Asp Arg Pro Trp  Glu Ala Ser Pro Ser  Val His Ile
    1100                1105                1110
Leu Thr  Glu Val Leu Lys Gly  Val Leu Asn Arg Ser  Lys Arg Phe
    1115                1120                1125
Ile Phe  Thr Leu Ile Ala Val  Ile Met Gly Leu Ile  Ala Val Thr
    1130                1135                1140
Ala Thr  Ala Ala Val Ala Gly  Val Ala Leu His Ser  Ser Val Gln
```

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    1145                1150                1155
Ser Val  Asn Phe Val Asn Asp  Trp Gln Lys Asn Ser  Thr Arg Leu
    1160                1165                1170
Trp Asn  Ser Gln Ser Ser Ile  Asp Gln Lys Leu Ala  Asn Gln Ile
    1175                1180                1185
Asn Asp  Leu Arg Gln Thr Val  Ile Trp Met Gly Asp  Arg Leu Met
    1190                1195                1200
Ser Leu  Glu His Arg Phe Gln  Leu Gln Cys Asp Trp  Asn Thr Ser
    1205                1210                1215
Asp Phe  Cys Ile Thr Pro Gln  Ile Tyr Asn Glu Ser  Glu His His
    1220                1225                1230
Trp Asp  Met Val Arg Arg His  Leu Gln Gly Arg Glu  Asp Asn Leu
    1235                1240                1245
Thr Leu  Asp Ile Ser Lys Leu  Lys Glu Gln Ile Phe  Glu Ala Ser
    1250                1255                1260
Lys Ala  His Leu Asn Leu Val  Pro Gly Thr Glu Ala  Ile Ala Gly
    1265                1270                1275
Val Ala  Asp Gly Leu Ala Asn  Leu Asn Pro Val Thr  Trp Val Lys
    1280                1285                1290
Thr Ile  Gly Ser Thr Ser Ile  Ile Asn Leu Ile Leu  Ile Leu Val
    1295                1300                1305
Cys Leu  Phe Cys Leu Leu Leu  Val Cys Arg Cys Thr  Gln Gln Leu
    1310                1315                1320
Arg Arg  Asp Ser Asp His Arg  Glu Arg Ala Met Met  Thr Met Ala
    1325                1330                1335
Val Leu  Ser Lys Arg Lys Gly  Gly Asn Val Gly Lys  Ser Lys Arg
    1340                1345                1350
Asp Gln  Ile Val Thr Val Ser  Val
    1355                1360
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<210> 109
<211> 105
<212> PRT
<213> Homo sapiens

<400> 109

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Met Asn Pro Ser Glu Met Gln Arg Lys Ala Pro Pro Arg Arg Arg Arg
1               5                  10                  15
His Arg Asn Arg Ala Pro Leu Thr His Lys Met Asn Lys Met Val Thr
            20                  25                  30
Ser Glu Glu Gln Met Lys Leu Pro Ser Thr Lys Lys Ala Gly Pro Pro
        35                  40                  45
Thr Trp Ala Gln Leu Lys Lys Leu Thr Gln Leu Ala Thr Lys Tyr Leu
    50                  55                  60
Glu Asn Thr Lys Val Thr Gln Thr Pro Glu Ser Met Leu Leu Ala Ala
65                  70                  75                  80
Leu Met Ile Val Ser Met Val Ser Ala Gly Val Pro Asn Ser Ser Glu
                85                  90                  95
Glu Thr Ala Thr Ile Glu Asn Gly Pro
            100                 105
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<210> 110
<211> 20
<212> DNA
<213> Homo sapiens

<400> 110
gaaaaaaatc aaaaaaagaa 20

<210> 111

<211> 17
<212> DNA
<213> Homo sapiens

<400> 111
agccattaat gccataa 17

<210> 112
<211> 15
<212> DNA
<213> Homo sapiens

<400> 112
taaataggat cactt 15

<210> 113
<211> 28
<212> DNA
<213> Homo sapiens

<400> 113
ggtgcggaaa tcaccatgcc cgctccat 28

<210> 114
<211> 18
<212> DNA
<213> Homo sapiens

<400> 114
attatatagc cccacgag 18

<210> 115
<211> 21
<212> DNA
<213> Homo sapiens

<400> 115
caagatggga tataccag g 21

<210> 116
<211> 18
<212> DNA
<213> Homo sapiens

<400> 116
aaaacagaaa aaccggtg 18

<210> 117
<211> 16
<212> DNA
<213> Homo sapiens

<400> 117
aaatcagtgg ccgcta 16

<210> 118

<211> 17
<212> DNA
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<400> 118
agttagaaaa gggtcac 17

<210> 119
<211> 16
<212> DNA
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<400> 119
tgagccttcg ttctca 16

<210> 120
<211> 17
<212> DNA
<213> Homo sapiens

<400> 120
aggcaaatgg catacgt 17

<210> 121
<211> 15
<212> DNA
<213> Homo sapiens

<400> 121
ggcctctcca acccg 15

<210> 122
<211> 17
<212> DNA
<213> Homo sapiens

<400> 122
gagcaggatt gtgaaaa 17

<210> 123
<211> 21
<212> DNA
<213> Homo sapiens

<400> 123
tcttcaacca gtgagagaaa a 21

<210> 124
<211> 20
<212> DNA
<213> Homo sapiens

<400> 124
attatattga tgatatttta 20

<210> 125

<211> 15
<212> DNA
<213> Homo sapiens

<400> 125
aacgaaagat aaatt 15

<210> 126
<211> 15
<212> DNA
<213> Homo sapiens

<400> 126
tgactgttat acatt 15

<210> 127
<211> 16
<212> DNA
<213> Homo sapiens

<400> 127
ttcattattt agggat 16

<210> 128
<211> 19
<212> DNA
<213> Homo sapiens

<400> 128
agatagaaaa tagaaaaat 19

<210> 129
<211> 15
<212> DNA
<213> Homo sapiens

<400> 129
attattcaaa atact 15

<210> 130
<211> 16
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<400> 130
aataacaaaa ttatgt 16

<210> 131
<211> 15
<212> DNA
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<400> 131
agacaaaata gttgt 15

<210> 132

<211> 17
<212> DNA
<213> Homo sapiens

<400> 132
tcccttaac caaggaa 17

<210> 133
<211> 15
<212> DNA
<213> Homo sapiens

<400> 133
aaaagaatga gtcat 15

<210> 134
<211> 15
<212> DNA
<213> Homo sapiens

<400> 134
cagtatcact tgact 15

<210> 135
<211> 23
<212> DNA
<213> Homo sapiens

<400> 135
ttttaatcag tctattaaca ttg 23

<210> 136
<211> 16
<212> DNA
<213> Homo sapiens

<400> 136
aaaggatatt gagaga 16

<210> 137
<211> 16
<212> DNA
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<400> 137
cctaatcaaa tacatt 16

<210> 138
<211> 15
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<400> 138
cgctgtttaa tttgt 15

<210> 139

<211> 16
<212> DNA
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<400> 139
tgcattcatg gaagca 16

<210> 140
<211> 15
<212> DNA
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<400> 140
actcaggagg caaga 15

<210> 141
<211> 16
<212> DNA
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<400> 141
ttaagagaca tttatt 16

<210> 142
<211> 16
<212> DNA
<213> Homo sapiens

<400> 142
taaagcagtt caaaaa 16

<210> 143
<211> 15
<212> DNA
<213> Homo sapiens

<400> 143
aataggaatt ctcta 15

<210> 144
<211> 16
<212> DNA
<213> Homo sapiens

<400> 144
aaagctcaat tggtta 16

<210> 145
<211> 16
<212> DNA
<213> Homo sapiens

<400> 145
acggacgatc atttaa 16

<210> 146

<211> 666
<212> PRT
<213> Homo sapiens

<400> 146

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Met Gly Gln Thr Lys Ser Lys Ile Lys Ser Lys Tyr Ala Ser Tyr Leu
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Ser Phe Ile Lys Ile Leu Leu Lys Arg Gly Gly Val Lys Val Ser Thr
            20                  25                  30
Lys Asn Leu Ile Lys Leu Phe Gln Ile Ile Glu Gln Phe Cys Pro Trp
        35                  40                  45
Phe Pro Glu Gln Gly Thr Leu Asp Leu Lys Asp Trp Lys Arg Ile Gly
    50                  55                  60
Lys Glu Leu Lys Gln Ala Gly Arg Lys Gly Asn Ile Ile Pro Leu Thr
65                  70                  75                  80
Val Trp Asn Asp Trp Ala Ile Ile Lys Ala Ala Leu Glu Pro Phe Gln
                85                  90                  95
Thr Glu Glu Asp Ser Val Ser Val Ser Asp Ala Pro Gly Ser Cys Ile
            100                 105                 110
Ile Asp Cys Asn Glu Asn Thr Gly Lys Lys Ser Gln Lys Glu Thr Glu
        115                 120                 125
Gly Leu His Cys Glu Tyr Val Ala Glu Pro Val Met Ala Gln Ser Thr
    130                 135                 140
Gln Asn Val Asp Tyr Asn Gln Leu Gln Glu Val Ile Tyr Pro Glu Thr
145                 150                 155                 160
Leu Lys Leu Glu Gly Lys Gly Pro Glu Leu Val Gly Pro Ser Glu Ser
                165                 170                 175
Lys Pro Arg Gly Thr Ser Pro Leu Pro Ala Gly Gln Val Pro Val Thr
            180                 185                 190
Leu Gln Pro Gln Lys Gln Val Lys Glu Asn Lys Thr Gln Pro Pro Val
        195                 200                 205
Ala Tyr Gln Tyr Trp Pro Pro Ala Glu Leu Gln Tyr Arg Pro Pro Pro
    210                 215                 220
Glu Ser Gln Tyr Gly Tyr Pro Gly Met Pro Pro Ala Pro Gln Gly Arg
225                 230                 235                 240
Ala Pro Tyr Pro Gln Pro Pro Thr Arg Arg Leu Asn Pro Thr Ala Pro
                245                 250                 255
Pro Ser Arg Gln Gly Ser Lys Leu His Glu Ile Ile Asp Lys Ser Arg
            260                 265                 270
Lys Glu Gly Asp Thr Glu Ala Trp Gln Phe Pro Val Thr Leu Glu Pro
        275                 280                 285
Met Pro Pro Gly Glu Gly Ala Gln Glu Gly Glu Pro Pro Thr Val Glu
    290                 295                 300
Ala Arg Tyr Lys Ser Phe Ser Ile Lys Lys Leu Lys Asp Met Lys Glu
305                 310                 315                 320
Gly Val Lys Gln Tyr Gly Pro Asn Ser Pro Tyr Met Arg Thr Leu Leu
                325                 330                 335
Asp Ser Ile Ala His Gly His Arg Leu Ile Pro Tyr Asp Trp Glu Ile
            340                 345                 350
Gln Ala Lys Ser Ser Leu Ser Pro Ser Gln Phe Leu Gln Phe Lys Thr
        355                 360                 365
Trp Trp Ile Asp Gly Val Gln Glu Gln Val Arg Arg Asn Arg Ala Ala
    370                 375                 380
Asn Pro Pro Val Asn Ile Asp Ala Asp Gln Leu Leu Gly Ile Gly Gln
385                 390                 395                 400
Asn Trp Ser Thr Ile Ser Gln Gln Ala Leu Met Gln Asn Glu Ala Ile
                405                 410                 415
Glu Gln Val Arg Ala Ile Cys Leu Arg Ala Trp Glu Lys Ile Gln Asp
            420                 425                 430
Pro Gly Ser Thr Cys Pro Ser Phe Asn Thr Val Arg Gln Gly Ser Lys
        435                 440                 445
Glu Pro Tyr Pro Asp Phe Val Ala Arg Leu Gln Asp Val Ala Gln Lys
    450                 455                 460
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Ser Ile Ala Asp Glu Lys Ala Arg Lys Val Ile Val Glu Leu Met Ala
465                 470                 475                 480
Tyr Glu Asn Ala Asn Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys
                485                 490                 495
Gly Lys Val Pro Ala Gly Ser Asp Val Ile Ser Glu Tyr Val Lys Ala
            500                 505                 510
Cys Asp Gly Ile Gly Gly Ala Met His Lys Ala Met Leu Met Ala Gln
        515                 520                 525
Ala Ile Thr Gly Val Val Leu Gly Gly Gln Val Arg Thr Phe Gly Arg
    530                 535                 540
Lys Cys Tyr Asn Cys Gly Gln Ile Gly His Leu Lys Lys Asn Cys Pro
545                 550                 555                 560
Val Leu Asn Lys Gln Asn Ile Thr Ile Gln Ala Thr Thr Thr Gly Arg
                565                 570                 575
Glu Pro Pro Asp Leu Cys Pro Arg Cys Lys Lys Gly Lys His Trp Ala
            580                 585                 590
Ser Gln Cys Arg Ser Lys Phe Asp Lys Asn Gly Gln Pro Leu Ser Gly
        595                 600                 605
Asn Glu Gln Arg Gly Gln Pro Gln Ala Pro Gln Gln Thr Gly Ala Phe
    610                 615                 620
Pro Ile Gln Pro Phe Val Pro Gln Gly Phe Gln Gly Gln Gln Pro Pro
625                 630                 635                 640
Leu Ser Gln Val Phe Gln Gly Ile Ser Gln Leu Pro Gln Tyr Asn Asn
                645                 650                 655
Cys Pro Pro Pro Gln Ala Ala Val Gln Gln
            660                 665
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<210> 147
<211> 333
<212> PRT
<213> Homo sapiens

<400> 147

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Trp Ala Thr Ile Val Gly Lys Arg Ala Lys Gly Pro Ala Ser Gly Pro
1               5                   10                  15
Thr Thr Asn Trp Gly Ile Pro Asn Ser Ala Ile Cys Ser Ser Gly Phe
            20                  25                  30
Ser Gly Thr Thr Thr Pro Thr Val Pro Ser Val Ser Gly Asn Lys Pro
        35                  40                  45
Val Thr Thr Ile Gln Gln Leu Ser Pro Ala Thr Ser Gly Ser Ala Ala
    50                  55                  60
Val Asp Leu Cys Thr Ile Gln Ala Val Ser Leu Leu Pro Gly Glu Pro
65                  70                  75                  80
Pro Gln Lys Thr Pro Thr Gly Val Tyr Gly Pro Leu Pro Lys Gly Thr
                85                  90                  95
Val Gly Leu Ile Leu Gly Arg Ser Ser Leu Asn Leu Lys Gly Val Gln
            100                 105                 110
Ile His Thr Ser Val Val Asp Ser Asp Tyr Lys Gly Glu Ile Gln Leu
        115                 120                 125
Val Ile Ser Ser Ser Ile Pro Trp Ser Ala Ser Pro Arg Asp Arg Ile
    130                 135                 140
Ala Gln Leu Leu Leu Leu Pro Tyr Ile Lys Gly Gly Asn Ser Glu Ile
145                 150                 155                 160
Lys Arg Ile Gly Gly Leu Gly Ser Thr Asp Pro Thr Gly Lys Ala Ala
                165                 170                 175
Tyr Trp Ala Ser Gln Val Ser Glu Asn Arg Pro Val Cys Lys Ala Ile
            180                 185                 190
Ile Gln Gly Lys Gln Phe Glu Gly Leu Val Asp Thr Gly Ala Asp Val
        195                 200                 205
Ser Ile Ile Ala Leu Asn Gln Trp Pro Lys Asn Trp Pro Lys Gln Lys
    210                 215                 220
Ala Val Thr Gly Leu Val Gly Ile Gly Thr Ala Ser Glu Val Tyr Gln
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225 230 235 240
Ser Thr Glu Ile Leu His Cys Leu Gly Pro Asp Asn Gln Glu Ser Thr
245 250 255
Val Gln Pro Met Ile Thr Ser Ile Pro Leu Asn Leu Trp Gly Arg Asp
260 265 270
Leu Leu Gln Gln Trp Gly Ala Glu Ile Thr Met Pro Ala Pro Ser Tyr
275 280 285
Ser Pro Thr Ser Gln Lys Ile Met Thr Lys Met Gly Tyr Ile Pro Gly
290 295 300
Lys Gly Leu Gly Lys Asn Glu Asp Gly Ile Lys Ile Pro Val Glu Ala
305 310 315 320
Lys Ile Asn Gln Glu Arg Glu Gly Ile Gly Asn Pro Cys
325 330

<210> 148
<211> 956
<212> PRT
<213> Homo sapiens

<400> 148
Asn Lys Ser Arg Lys Arg Arg Asn Arg Glu Ser Leu Leu Gly Ala Ala
1 5 10 15
Thr Val Glu Pro Pro Lys Pro Ile Pro Leu Thr Trp Lys Thr Glu Lys
20 25 30
Pro Val Trp Val Asn Gln Trp Pro Leu Pro Lys Gln Lys Leu Glu Ala
35 40 45
Leu His Leu Leu Ala Asn Glu Gln Leu Glu Lys Gly His Ile Glu Pro
50 55 60
Ser Phe Ser Pro Trp Asn Ser Pro Val Phe Val Ile Gln Lys Lys Ser
65 70 75 80
Gly Lys Trp Arg Met Leu Thr Asp Leu Arg Ala Val Asn Ala Val Ile
85 90 95
Gln Pro Met Gly Pro Leu Gln Pro Gly Leu Pro Ser Pro Ala Met Ile
100 105 110
Pro Lys Asp Trp Pro Leu Ile Ile Ile Asp Leu Lys Asp Cys Phe Phe
115 120 125
Thr Ile Pro Leu Ala Glu Gln Asp Cys Glu Lys Phe Ala Phe Thr Ile
130 135 140
Pro Ala Ile Asn Asn Lys Glu Pro Ala Thr Arg Phe Gln Trp Lys Val
145 150 155 160
Leu Pro Gln Gly Met Leu Asn Ser Pro Thr Ile Cys Gln Thr Phe Val
165 170 175
Gly Arg Ala Leu Gln Pro Val Arg Glu Lys Phe Ser Asp Cys Tyr Ile
180 185 190
Ile His Cys Ile Asp Asp Ile Leu Cys Ala Ala Glu Thr Lys Asp Lys
195 200 205
Leu Ile Asp Cys Tyr Thr Phe Leu Gln Ala Glu Val Ala Asn Ala Gly
210 215 220
Leu Ala Ile Ala Ser Asp Lys Ile Gln Thr Ser Thr Pro Phe His Tyr
225 230 235 240
Leu Gly Met Gln Ile Glu Asn Arg Lys Ile Lys Pro Gln Lys Ile Glu
245 250 255
Ile Arg Lys Asp Thr Leu Lys Thr Leu Asn Asp Phe Gln Lys Leu Leu
260 265 270
Gly Asp Ile Asn Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr Ala
275 280 285
Met Ser Asn Leu Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn Ser
290 295 300
Lys Arg Met Leu Thr Pro Glu Ala Thr Lys Glu Ile Lys Leu Val Glu
305 310 315 320
Glu Lys Ile Gln Ser Ala Gln Ile Asn Arg Ile Asp Pro Leu Ala Pro
325 330 335

Leu Gln Leu Leu Ile Phe Ala Thr Ala His Ser Pro Thr Gly Ile Ile
340 345 350
Ile Gln Asn Thr Asp Leu Val Glu Trp Ser Phe Leu Pro His Ser Thr
355 360 365
Val Lys Thr Phe Thr Leu Tyr Leu Asp Gln Ile Ala Thr Leu Ile Gly
370 375 380
Gln Thr Arg Leu Arg Ile Ile Lys Leu Cys Gly Asn Asp Pro Asp Lys
385 390 395 400
Ile Val Val Pro Leu Thr Lys Glu Gln Val Arg Gln Ala Phe Ile Asn
405 410 415
Ser Gly Ala Trp Lys Ile Gly Leu Ala Asn Phe Val Gly Ile Ile Asp
420 425 430
Asn His Tyr Pro Lys Thr Lys Ile Phe Gln Phe Leu Lys Leu Thr Thr
435 440 445
Trp Ile Leu Pro Lys Ile Thr Arg Arg Glu Pro Leu Glu Asn Ala Leu
450 455 460
Thr Val Phe Thr Asp Gly Ser Ser Asn Gly Lys Ala Ala Tyr Thr Gly
465 470 475 480
Pro Lys Glu Arg Val Ile Lys Thr Pro Tyr Gln Ser Ala Gln Arg Ala
485 490 495
Glu Leu Val Ala Val Ile Thr Val Leu Gln Asp Phe Asp Gln Pro Ile
500 505 510
Asn Ile Ile Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Arg Asp Val
515 520 525
Glu Thr Ala Leu Ile Lys Tyr Ser Met Asp Asp Gln Leu Asn Gln Leu
530 535 540
Phe Asn Leu Leu Gln Gln Thr Val Arg Lys Arg Asn Phe Pro Phe Tyr
545 550 555 560
Ile Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys
565 570 575
Ala Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Leu Ile Lys Ala
580 585 590
Gln Glu Leu His Ala Leu Thr His Val Asn Ala Ala Gly Leu Lys Asn
595 600 605
Lys Phe Asp Val Thr Trp Lys Gln Ala Lys Asp Ile Val Gln His Cys
610 615 620
Thr Gln Cys Gln Val Leu His Leu Pro Thr Gln Glu Ala Gly Val Asn
625 630 635 640
Pro Arg Gly Leu Cys Pro Asn Ala Leu Trp Gln Met Asp Val Thr His
645 650 655
Val Pro Ser Phe Gly Arg Leu Ser Tyr Val His Val Thr Val Asp Thr
660 665 670
Tyr Ser His Phe Ile Trp Ala Thr Cys Gln Thr Gly Glu Ser Thr Ser
675 680 685
His Val Lys Lys His Leu Leu Ser Cys Phe Ala Val Met Gly Val Pro
690 695 700
Glu Lys Ile Lys Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Phe
705 710 715 720
Gln Lys Phe Leu Ser Gln Trp Lys Ile Ser His Thr Thr Gly Ile Pro
725 730 735
Tyr Asn Ser Gln Gly Gln Ala Ile Val Glu Arg Thr Asn Arg Thr Leu
740 745 750
Lys Thr Gln Leu Val Lys Gln Lys Glu Gly Gly Asp Ser Lys Glu Cys
755 760 765
Thr Thr Pro Gln Met Gln Leu Asn Leu Ala Leu Tyr Thr Leu Asn Phe
770 775 780
Leu Asn Ile Tyr Arg Asn Gln Thr Thr Thr Ser Ala Glu Gln His Leu
785 790 795 800
Thr Gly Lys Lys Asn Ser Pro His Glu Gly Lys Leu Ile Trp Trp Lys
805 810 815
Asp Asn Lys Asn Lys Thr Trp Glu Ile Gly Lys Val Ile Thr Trp Gly
820 825 830
Arg Gly Phe Ala Cys Val Ser Pro Gly Glu Asn Gln Leu Pro Val Trp

835 840 845
Ile Pro Thr Arg His Leu Lys Phe Tyr Asn Glu Pro Ile Arg Asp Ala
850 855 860
Lys Lys Ser Thr Ser Ala Glu Thr Glu Thr Ser Gln Ser Ser Thr Val
865 870 875 880
Asp Ser Gln Asp Glu Gln Asn Gly Asp Val Arg Arg Thr Asp Glu Val
885 890 895
Ala Ile His Gln Glu Gly Arg Ala Ala Asn Leu Gly Thr Thr Lys Glu
900 905 910
Ala Asp Ala Val Ser Tyr Lys Ile Ser Arg Glu His Lys Gly Asp Thr
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Gly Lys Ser Pro Tyr Ala Cys Arg Ser Ser Cys Ser
945 950 955

<210> 149
<211> 699
<212> PRT
<213> Homo sapiens

<400> 149
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35 40 45
Thr Trp Ala Gln Leu Lys Lys Leu Thr Gln Leu Ala Thr Lys Tyr Leu
50 55 60
Glu Asn Thr Lys Val Thr Gln Thr Pro Glu Ser Met Leu Leu Ala Ala
65 70 75 80
Leu Met Ile Val Ser Met Val Val Ser Leu Pro Met Pro Ala Gly Ala
85 90 95
Ala Ala Ala Asn Tyr Thr Tyr Trp Ala Tyr Val Pro Phe Pro Pro Leu
100 105 110
Ile Arg Ala Val Thr Trp Met Asp Asn Pro Thr Glu Val Tyr Val Asn
115 120 125
Asp Ser Val Trp Val Pro Gly Pro Ile Asp Asp Arg Cys Pro Ala Lys
130 135 140
Pro Glu Glu Glu Gly Met Met Ile Asn Ile Ser Ile Gly Tyr His Tyr
145 150 155 160
Pro Pro Ile Cys Leu Gly Arg Ala Pro Gly Cys Leu Met Pro Ala Val
165 170 175
Gln Asn Trp Leu Val Glu Val Pro Thr Val Ser Pro Ile Cys Arg Phe
180 185 190
Thr Tyr His Met Val Ser Gly Met Ser Leu Arg Pro Arg Val Asn Tyr
195 200 205
Leu Gln Asp Phe Ser Tyr Gln Arg Ser Leu Lys Phe Arg Pro Lys Gly
210 215 220
Lys Pro Cys Pro Lys Glu Ile Pro Lys Glu Ser Lys Asn Thr Glu Val
225 230 235 240
Leu Val Trp Glu Glu Cys Val Ala Asn Ser Ala Val Ile Leu Gln Asn
245 250 255
Asn Glu Phe Gly Thr Ile Ile Asp Trp Ala Pro Arg Gly Gln Phe Tyr
260 265 270
His Asn Cys Ser Gly Gln Thr Gln Ser Cys Pro Ser Ala Gln Val Ser
275 280 285
Pro Ala Val Asp Ser Asp Leu Thr Glu Ser Leu Asp Lys His Lys His
290 295 300
Lys Lys Leu Gln Ser Phe Tyr Pro Trp Glu Trp Gly Glu Lys Gly Ile
305 310 315 320

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Ser Thr Pro Arg Pro Lys Ile Val Ser Pro Val Ser Gly Pro Glu His
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Pro Glu Leu Trp Arg Leu Thr Val Ala Ser His His Ile Arg Ile Trp
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Ser Gly Asn Gln Thr Leu Glu Thr Arg Asp Arg Lys Pro Phe Tyr Thr
        355                 360                 365
Ile Asp Leu Asn Ser Ser Leu Thr Val Pro Leu Gln Ser Cys Val Lys
    370                 375                 380
Pro Pro Tyr Met Leu Val Val Gly Asn Ile Val Ile Lys Pro Asp Ser
385                 390                 395                 400
Gln Thr Ile Thr Cys Glu Asn Cys Arg Leu Leu Thr Cys Ile Asp Ser
                405                 410                 415
Thr Phe Asn Trp Gln His Arg Ile Leu Leu Val Arg Ala Arg Glu Gly
            420                 425                 430
Val Trp Ile Pro Val Ser Met Asp Arg Pro Trp Glu Ala Ser Pro Ser
        435                 440                 445
Val His Ile Leu Thr Glu Val Leu Lys Gly Val Leu Asn Arg Ser Lys
    450                 455                 460
Arg Phe Ile Phe Thr Leu Ile Ala Val Ile Met Gly Leu Ile Ala Val
465                 470                 475                 480
Thr Ala Thr Ala Ala Val Ala Gly Val Ala Leu His Ser Ser Val Gln
                485                 490                 495
Ser Val Asn Phe Val Asn Asp Trp Gln Lys Asn Ser Thr Arg Leu Trp
            500                 505                 510
Asn Ser Gln Ser Ser Ile Asp Gln Lys Leu Ala Asn Gln Ile Asn Asp
        515                 520                 525
Leu Arg Gln Thr Val Ile Trp Met Gly Asp Arg Leu Met Ser Leu Glu
    530                 535                 540
His Arg Phe Gln Leu Gln Cys Asp Trp Asn Thr Ser Asp Phe Cys Ile
545                 550                 555                 560
Thr Pro Gln Ile Tyr Asn Glu Ser Glu His His Trp Asp Met Val Arg
                565                 570                 575
Arg His Leu Gln Gly Arg Glu Asp Asn Leu Thr Leu Asp Ile Ser Lys
            580                 585                 590
Leu Lys Glu Gln Ile Phe Glu Ala Ser Lys Ala His Leu Asn Leu Val
        595                 600                 605
Pro Gly Thr Glu Ala Ile Ala Gly Val Ala Asp Gly Leu Ala Asn Leu
    610                 615                 620
Asn Pro Val Thr Trp Val Lys Thr Ile Gly Ser Thr Thr Ile Ile Asn
625                 630                 635                 640
Leu Ile Leu Ile Leu Val Cys Leu Phe Cys Leu Leu Leu Val Cys Arg
                645                 650                 655
Cys Thr Gln Gln Leu Arg Arg Asp Ser Asp His Arg Glu Arg Ala Met
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Met Thr Met Ala Val Leu Ser Lys Arg Lys Gly Gly Asn Val Gly Lys
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<210> 150
<211> 968
<212> DNA
<213> Homo sapiens

<400> 150

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cttaagagtc atcaccactc cctaatctca agtacccagg gacacaaaaa ctgcggaagg    300
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cccctaca 968

<210> 151
<211> 962
<212> DNA
<213> Homo sapiens

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<210> 152
<211> 968
<212> DNA
<213> Homo sapiens

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<210> 153

<211> 968
<212> DNA
<213> Homo sapiens

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gattgtatgc tccatctact gagataggga aaaaccgcct tagggctgga ggtgggacct 600
gcgggcagca atactgcttt gtaaagcatt gagctgttta tgtgtatgca tatctaaaag 660
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<210> 154
<211> 968
<212> DNA
<213> Homo sapiens

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<211> 150
<212> DNA
<213> Homo sapiens

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<210> 156
<211> 258
<212> DNA

<213> Homo sapiens

<400> 156
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<210> 157
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<212> DNA
<213> Homo sapiens

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<223> N=A,G,C,T

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<211> 673
<212> PRT
<213> Homo sapiens

<220>
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<222> (1)..(673)
<223> Xaa=Any amino acid

<400> 158

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